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IMMANUEL KANT'S

CRITIQUE OF PURE REASON

In Commemoration of the Centenary of its First Publication

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TRANSLATED INTO ENGLISH

BY

F. MAX MÜLLER

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WITH AN HISTORICAL INTRODUCTION

BY

LUDWIG NOIRÉ

London

MACMILLAN AND CO.

1881

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IMMANUEL KANT'S

CRITIQUE OF PURE REASON

First Part

CONTAINING

1. PREFACE BY F. MAX MÜLLER
2. HISTORICAL INTRODUCTION BY LUDWIG NOIRÉ
3. SUPPLEMENTS OF THE SECOND EDITION OF THE CRITIQUE

London

MACMILLAN AND CO.

1881

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OXFORD:

PRINTED BY E. PICKARD HALL, M.A., AND J. H. STACY.

PRINTERS TO THE UNIVERSITY.

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TRANSLATOR'S PREFACE.

Why I thought I might translate Kant's Critique.

'*But how can you waste your time on a translation of Kant's Critik der reinen Vernunft?*' This question, which has been addressed to me by several friends, I think I shall best be able to answer in a preface to that translation itself. And I shall try to answer it point by point.

First, then, with regard to myself. Why should I waste my time on a translation of Kant's Critik der reinen Vernunft?—that is, Were there not other persons more fitted for that task, or more specially called upon to undertake it?

It would be the height of presumption on my part to imagine that there were not many scholars who could have performed such a task as well as myself, or far better. All I can say is, that for nearly thirty years I have been waiting for some one really qualified, who would be willing to execute such a task, and have waited in vain. What I feel convinced of is that an adequate translation of Kant must be the work of a German scholar. That conviction was deeply impressed on my mind when reading, now many years ago, Kant's great work with a small class of young students at Oxford—among whom I may mention the names of Appleton, Caird, Nettleship, and Wallace. Kant's style is careless and involved,

and no wonder that it should be so, if we consider that he wrote down the whole of the Critique in not quite five months. Now, beside the thread of the argument itself, the safest thread through the mazes of his sentences must be looked for in his adverbs and particles. They, and they only, indicate clearly the true articulation of his thoughts, and they alone impart to his phrases that peculiar intonation which tells those who are accustomed to that bye-play of language, what the author has really in his mind, and what he wants to express, if only he could find the right way to do it.

When reading and critically interpreting Kant's text, I sometimes compared other translations, particularly the English translations by Haywood and Meiklejohn[1], and excellent as I found their renderings, particularly the latter, in many places, I generally observed that, when the thread was lost, it was owing to a neglect of particles and adverbs, though sometimes also to a want of appreciation of the real, and not simply the dictionary meaning, of German words. It is not my intention to write here a criticism of previous translations; on the contrary, I should prefer to express my obligation to them for several useful suggestions which I have received from them in the course of what I know to be a most arduous task. But in order to give an idea of what I mean by the danger arising from a neglect of adverbs and particles in

[1] I discovered too late that Professor Mahaffy, in his translation of Kuno Fischer's work on Kant (Longmans, 1866), has given some excellent specimens of what a translation of Kant ought to be. Had I known of them in time, I should have asked to be allowed to incorporate them in my own translation.

German, I shall mention at least a few of the passages of which I am thinking.

On p. 421 (484), Kant says: *Da also selbst die Auflösung dieser Aufgaben niemals in der Erfahrung vorkommen kann.* This means, 'As therefore even the solution of these problems can never occur in experience,' i. e. as, taking experience as it is, we have no right even to start such a problem, much less to ask for its solution. Here the particle *also* implies that the writer, after what he has said before, feels justified in taking the thing for granted. But if we translate, 'Although, therefore, the solution of these problems is unattainable through experience,' we completely change the drift of Kant's reasoning. He wants to take away that very excuse that there exists only some uncertainty in the solution of these problems, by showing that the problems themselves can really never arise, and therefore do not require a solution at all. Kant repeats the same statement in the same page with still greater emphasis, when he says: *Die dogmatische Auflösung ist also nicht etwa ungewiss, sondern unmöglich,* i. e. 'Hence the dogmatical solution is not, as you imagine, uncertain, but it is impossible.'

On p. 421 (485), the syntactical structure of the sentence, as well as the intention of the writer, does not allow of our changing the words *so ist es klüglich gehandelt,* into a question. It is the particle *so* which requires the transposition of the pronoun (*ist es* instead of *es ist*), not the interrogative character of the whole sentence.

On p. 427 (492), *wenn* cannot be rendered by *although*, which is *wenn auch* in German. *Wenn beide nach*

empirischen Gesetzen in einer Erfahrung richtig und durchgängig zusammenhängen, means, 'If both have a proper and thorough coherence in an experience, according to empirical laws;' and not, 'Although both have,' etc.

Sollen is often used in German to express what, according to the opinion of certain people, is meant to be. Thus Kant, on p. 492 (570), speaks of the ideals which painters have in their minds, and *die ein nicht mitzutheilendes Schattenbild ihrer Producte oder auch Beurtheilungen sein sollen*, that is, 'which, according to the artists' professions, are a kind of vague shadows only of their creations and criticisms, which cannot be communicated.' All this is lost, if we translate, 'which can serve neither as a model for production, nor as a standard for appreciation.' It may come to that in the end, but it is certainly not the way in which Kant arrives at that conclusion.

On p. 536 (625), *den einzigmöglichen Beweisgrund (wofern überall nur ein speculativer Beweis statt findet)* is not incorrectly rendered by 'the only possible ground of proof (possessed by speculative reason);' yet we lose the thought implied by Kant's way of expression, viz. that the possibility of such a speculative proof is very doubtful.

The same applies to an expression which occurs on p. 586 (684), *ein solches Schema, als ob es ein wirkliches Wesen wäre*. Kant speaks of a schema which is conceived to be real, but is not so, and this implied meaning is blurred, if we translate 'a schema, which requires us to regard this ideal thing as an actual existence.'

In German, if we speak of two things mentioned

together, we do not use *letzter* in opposition to *jener*. On p. 256 (295), Kant speaks of the place which is to be assigned, by means of transcendental reflection, to every presentation (Vorstellung), as belonging either to sensibility or to the understanding, and of the influence which that assignation exercises on the proper representation of a given object. He ends by saying: *Wodurch jeder Vorstellung ihre Stelle in der ihr angemessenen Erkenntnisskraft angewiesen, mithin auch der Einfluss der letzteren auf jene unterschieden wird*, that is, 'Whereby the right place is assigned to each representation in the faculty of knowledge corresponding to it, and the influence of the latter, i. e. of either faculty of knowledge, upon such representation is determined;' not, 'and consequently the influence of the one faculty upon the other is made apparent.'

On p. 608 (712), Kant writes: *Methoden, die zwar sonst der Vernunft, aber nur nicht hier wol anpassen.*

This has been translated: 'The methods which are originated by reason, but which are out of place in this sphere.'

This, again, is not entirely wrong, but it spoils the exact features of the sentence. What is really meant is: 'Methods which are suitable to reason in other spheres, only, I believe, not here.' It is curious to observe that Kant, careless as he was in the revision of his text, struck out *wol* in the Second Edition, because he may have wished to remove even that slight shade of hesitation which is conveyed by that particle. Possibly, however, *wol* may refer to *anpassen*, i. e. *pulchre convenire*, the limitation remaining much the same in either case.

Doch is a particle that may be translated in many different ways, but it can never be translated by *therefore.* Thus when Kant writes (Suppl. xiv. § 17, note, vol. i. p. 438), *folglich die Einheit des Bewusstseyns, als synthetisch, aber doch ursprünglich angetroffen wird,* he means to convey an opposition between synthetical and primitive, i. e. synthetical, and yet primitive. To say 'nevertheless synthetical, and therefore primitive' conveys the very opposite.

It may be a mere accident, yet in a metaphysical argument it must sometimes cause serious inconvenience, if the particle *not* is either omitted where Kant has it, or added where Kant has it not. It is of small consequence, if *not* is omitted in such a passage as, for instance, where Kant says in the preface to the Second Edition (vol. i. p. 385), that the obscurities of the first have given rise to misconceptions 'without his fault,' instead of 'not without his fault.' But the matter becomes more serious in other places.

Thus (Supplement xiv. § 26, vol. i. p. 455) Kant says, *ohne diese Tauglichkeit,* which means, 'unless the categories were adequate for that purpose,' but not, 'if the categories were adequate.' Again (Supplement xvi[b]. vol. i. p. 466), Kant agrees that space and time *cannot* be perceived by themselves, but not, that they can be thus perceived. And it must disturb even an attentive reader when, on p. 216 (248), he reads that 'the categories must be employed empirically, and cannot be employed transcendentally,' while Kant writes: *Da sie nicht von empirischem Gebrauch sein sollen, und von transcendentalem nicht sein können.*

As regards single words, there are many in German

which, taken in their dictionary meaning, seem to yield a tolerable sense, but which throw a much brighter light on a whole sentence, if they are understood in their more special idiomatic application.

Thus *vorrücken*, no doubt, may mean 'to place before,' but *Jemandem etwas vorrücken*, means 'to reproach somebody with something.' Hence (vol. i. p. 386) *die der rationalen Psychologie vorgerückten Paralogismen* does not mean 'the paralogisms which immediately precede the Rational Psychology,' but 'the paralogisms with which Rational Psychology has been reproached.'

On p. 411 (472), *nachhängen* cannot be rendered by 'to append.' *Er erlaubt der Vernunft idealischen Erklärungen der Natur nachzuhängen* means 'he allows reason to indulge in ideal explanations of nature,' but not 'to append idealistic explanations of natural phenomena.'

On p. 669 (781), *als ob er die bejahende Parthei ergriffen hätte*, does not mean 'to attack the position,' but 'to *adopt* the position of the assenting party.'

On p. 727 (847), *Wie kann ich erwarten* does not mean, 'How can I desire?' but, 'How can I expect?' which may seem to be not very different, but nevertheless gives a very different turn to the whole argument.

I have quoted these few passages, chiefly in order to show what I mean by the advantages which a German has in translating Kant, as compared with any other translator who has derived his knowledge of the language from grammars and dictionaries only. An accurate and scholarlike knowledge of German would, no doubt, suffice for a translation of

historical or scientific works. But in order to find our way through the intricate mazes of metaphysical arguments, a quick perception of what is meant by the sign-posts, I mean the adverbs and particles, and a natural feeling for idiomatic ways of speech, seem to me almost indispensable.

On the other hand, I am fully conscious of the advantages which English translators possess by their more perfect command of the language into which foreign thought has to be converted. Here I at once declare my own inferiority; nay, I confess that in rendering Kant's arguments in English I have thought far less of elegance, smoothness or rhythm, than of accuracy and clearness. What I have attempted to do is to give an honest, and, as far as possible, a literal translation, and, before all, a translation *that will construe;* and I venture to say that even to a German student of Kant this English translation will prove in many places more intelligible than the German original. It is difficult to translate the hymns of the Veda and the strains of the Upanishads, the odes of Pindar and the verses of Lucretius; but I doubt whether the difficulty of turning Kant's metaphysical German into intelligible and construable English is less. Nor do I wish my readers to believe that I have never failed in making Kant's sentences intelligible. There are a few sentences in Kant's Critique which I have not been able to construe to my own satisfaction, and where none of the friends whom I consulted could help me. Here all I could do was to give a literal rendering, hoping that future editors may succeed in amending

the text, and extracting from it a more intelligible sense.

Why I thought I ought to translate Kant's Critique.

But my friends in blaming me for wasting my time on a translation of Kant's Critique of Pure Reason gave me to understand that, though I might not be quite unfit, I was certainly not specially called upon to undertake such a work. It is true, no doubt, that no one could have blamed me for not translating Kant, but I should have blamed myself; in fact, I have blamed myself for many years for not doing a work which I felt must be done sooner or later. Year after year I hoped I should find leisure to carry out the long cherished plan, and when at last the Centenary of the publication of Kant's *Critik der reinen Vernunft* drew near, I thought I was in honour bound not to delay any longer this tribute to the memory of the greatest philosopher of modern times. Kant's Critique has been ~~my~~ constant companion through life. It drove me to despair when I first attempted to read it, a mere schoolboy. At the University I worked hard at it under Weisse, Lotze, and Drobisch at Leipzig, and my first literary attempts in philosophy, now just ~~forty~~ years old, were essays on Kant's Critique. Having once learnt from Kant what man can and what he cannot know, my plan of life was very simple, namely, to learn, so far as literature, tradition, and language allow us to do so, how man came to believe that he could know so much more than he

ever can know in religion, in mythology, and in philosophy. This required special studies in the field of the most ancient languages and literatures. But though these more special studies drew me away for many years towards distant times and distant countries, whatever purpose or method there may have been in the work of my life, was due to my beginning life with Kant.

Even at Oxford, whether I had to lecture on German literature or on the Science of Language, I have often, in season and out of season, been preaching Kant; and nothing I have missed so much, when wishing to come to an understanding on the great problems of life with some of my philosophical friends in England, than the common ground which is supplied by Kant for the discussion of every one of them. We need not be blind worshippers of Kant, but if for the solution of philosophical problems we are to take any well defined stand, we must, in this century of ours, take our stand on Kant. Kant's language, and by language I mean more than mere words, has become the *Lingua franca* of modern philosophy, and not to be able to speak it, is like studying ancient philosophy, without being able to speak Aristotle, or modern philosophy, without being able to speak Descartes. What Rosenkranz, the greatest among Hegel's disciples, said in 1838, is almost as true to-day as it was then: *Engländer, Franzosen und Italiener müssen, wenn sie vorwärts wollen, denselben Schritt thun, den Kant schon* 1781 *machte. Nur so können sie sich von ihrer dermaligen schlechten Meta-*

physik und den aus einer solchen sich ergebenden schlechten Consequenzen befreien.

It is hardly necessary at the present day to produce any arguments in support of such a view. The number of books on Kant's philosophy, published during the last century in almost every language of the world[1], speaks for itself. There is no single philosopher of any note, even among those who are decidedly opposed to Kant, who has not acknowledged his pre-eminence among modern philosophers. The great systems of Fichte, Schelling, Hegel, Herbart, and Schopenhauer branched off from Kant, and now, after a century has passed away, people begin to see that those systems were indeed mighty branches, but that the leading shoot of philosophy was and is still—Kant. No truer word has lately been spoken than what, I believe, was first said by Professor Weisse[2], in the Philosophical Society at Leipzig, of which I was then a member, and was again more strongly enforced by my friend and former colleague, Professor Liebmann of Strassburg, that, if philosophy wishes to go forward, it must go back to Kant. *Il faut reculer, pour mieux sauter.* Lange, in his History of Materialism, calls Kant the Copernicus of modern philosophy; aye, Kant himself was so fully conscious of the decentralising character of his system that he did not hesitate to compare his work with that of Copernicus[3]. But if Kant was right in his estimate of his own philosophy, it cannot be

[1] During the first ten years after the appearance of the Critique, three hundred publications have been counted for and against Kant's philosophy. See Vaihinger, Kommentar, i. p. 9.

[2] See Julius Walter, Zum Gedächtniss Kant's, p. 28.

[3] See Supplement II, vol. i. p. 370.

denied that, with but few, though memorable exceptions, philosophy in England is still Ante-Copernican. How little Kant is read by those who ought to read him, or how little he is understood by those who venture to criticise him, I never felt so keenly as when, in a controversy which I had some time ago with one of the most illustrious of English philosophers, I was told that space could not be an *a priori* intuition, because we may hear church-bells, without knowing where the belfry stands. Two philosophers, who both have read Kant's Critique, may differ from each other diametrically, but they will at least understand each other. They will not fire at each other like some of the German students who, for fear of killing their adversary, fire their pistols at right angles, thus endangering the life of their seconds rather than that of their adversaries.

This will explain why, for a long time, I have felt personally called upon to place the classical work of Kant within the reach of all philosophical readers in England, and in such a form that no one could say any longer that he could not construe it. I thought for a time that Professor Caird's excellent work 'On the Philosophy of Kant,' had relieved me of this duty. And, no doubt, that work has told, and has opened the eyes of many people in England and in America to the fact that, whatever we may think of all the outworks of Kant's philosophy, there is in it a central thought which forms a real rest and an entrenched ground on the onward march of the human intellect.

But it is a right sentiment after all, that it is

better to read a book than to read about it, and that, as my friend Stanley used to preach again and again, we should never judge of a book, unless we have read the whole of it ourselves. I therefore pledged myself to finish a new translation of Kant's Critique as my contribution to the celebration of its centenary, and though it has taken more time and more labour than I imagined, I do not think my time or my labour will have been wasted, if only people in England, and in America too, will now read the book that is a hundred years old, and yet as young and fresh as ever.

So far I have spoken of myself, and more perhaps than a wise man at my time of life ought to do. But I have still to say a few words to explain why I think that, if the time which I have bestowed on this undertaking has not been wasted, others also, and not philosophers by profession only, will find that I have not wasted their time by inducing them at the present time to read Kant's masterwork in a faithful English rendering.

Why a study of Kant's Critique seemed necessary at present.

It is curious that in these days when the idea of development, which was first elaborated by the students of philosophy, language, and religion, and afterwards applied with such brilliant success to the study of nature also, should now receive so little favour from the very sciences which first gave birth to it. Long before we heard of evolution in nature, we read of the dialectical evolution of thought, and

its realisation in history and nature. The history of philosophy was then understood to represent the continuous development of philosophical thought, and the chief object of the historian was to show the necessity with which one stage of philosophical thought led to another. This idea of *rational development*, which forms a far broader and safer basis than that of *natural development*, is the vital principle in the study of the human mind, quite as much, if not more, than in the study of nature. A study of language, of mythology, of religion, and philosophy, which does not rest on the principle of development, does not deserve the name of a science. The chief interest which these sciences possess, is not that they show us isolated and barren facts, but that they show us their origin and growth, and explain to us how what is, was the necessary result of what was. In drawing the stemma of languages, mythological formations, religious beliefs, and philosophical ideas, science may go wrong, and often has gone wrong. So have students of nature in drawing their stemmata of plants, and animals, and human beings. But the principle remains true, for all that. In spite of all that seems to be accidental or arbitrary, there is a natural and intelligible growth in what we call the creations of the human mind, quite as much as in what we call the works of nature. The one expression, it may be said, is as mythological as the other, because the category of substance cannot apply to either nature or mind. Both, however, express facts which must be explained; nay, it is the chief object of science to explain them, and to explain them genetically. Is

Aristotle possible or intelligible without Plato? Is Spinoza possible or intelligible without Descartes? Is Hume possible or intelligible without Berkeley? Is Kant possible or intelligible without Hume? These are broad questions, and admit of one answer only. But if we have once seen how the broad stream of thought follows its natural bent, flows onward, and never backward, we shall understand that it is as much the duty of the science of thought to trace unbroken the course of philosophy from Thales to Kant, as it is the duty of natural science to trace the continuous development of the single cell to the complicated organism of an animal body, or the possible metamorphosis of the Hipparion into the Hippos.

What I wanted, therefore, as an introduction to my translation of Kant's Critique, was a pedigree of philosophical thought, showing Kant's ancestors and Kant's descent. Here, too, Professor Caird's work seemed to me at one time to have done exactly what I wished to see done. Valuable, however, as Professor Caird's work is on all sides acknowledged to be, I thought that an even more complete list of Kantian ancestors might and should be given, and (what weighed even more with me), that these ancestors should be made to speak to us more in their own words than Professor Caird has allowed them to do.

At my time of life, and in the midst of urgent work, I felt quite unequal to that task, and I therefore applied to Professor Noiré who, more than any other philosopher I know, seemed to me qualified to

carry out that idea. Kant's philosophy, and more particularly the antecedents of Kant's philosophy, had been his favourite study for life, and no one, as I happened to know, possessed better materials than he did for giving, in a short compass, the *ipsissima verba* by which each of Kant's ancestors had made and marked his place in the history of thought. Professor Noiré readily complied with my request, and supplied a treatise which I hope will fully accomplish what I had in view. The translation was entrusted by him to one of the most distinguished translators of philosophical works in England, and though the exactness and gracefulness peculiar to Professor Noiré's German style could hardly have full justice done to them in an English rendering, particularly as the constant introduction of the *verba ipsissima* of various authors cannot but disturb the unity of the diction, I hope that many of my English readers will feel the same gratitude to him which I have here to express for his kind and ready help.

If, then, while making allowance for differences of opinion on smaller points, we have convinced ourselves that Kant is the last scion of that noble family of thinkers which Professor Noiré has drawn for us with the hand of a master, what follows? Does it follow that we should all and on all points become Kantians, that we should simply learn his philosophy, and be thankful that we know now all that can be known about the Freedom of the Will, the Immortality of the Soul, and the Existence of God? Far from it. No one would protest more strongly than Kant against what he himself calls 'learning philosophy,'

as opposed to 'being a philosopher.' All I contend for is that, in our own modern philosophy, the work once for all done by Kant can be as little ignored as the work done by Hume, Leibniz, Berkeley, Locke, Spinoza, and Descartes. I do not deny the historical importance of the Post-Kantian systems of philosophy, whether of Fichte, Schelling, Hegel, Herbart, or Schopenhauer in Germany, of Cousin in France, or of Mill in England. But most of these philosophers recognised Kant as their spiritual father[1]. Even Comte, ignorant as he was of German and German philosophy, expressed his satisfaction and pride when he discovered how near he had, though unconsciously, approached to Kant's philosophy[2]. Some years ago

[1] Julius Walter, Zum Gedächtniss Kant's, p. 27.

[2] 'J'ai lu et relu avec un plaisir infini le petit traité de Kant (Idee zu einer allgemeinen Geschichte in weltbürgerlicher Absicht, 1784); il est prodigieux pour l'époque, et même, si je l'avais connu six ou sept ans plus tôt, il m'aurait épargné de la peine. Je suis charmé que vous l'ayez traduit, il peut très-efficacement contribuer à préparer les esprits à la philosophie positive. La conception générale ou au moins la méthode y est encore métaphysique, mais les détails montrent à chaque instant l'esprit positif. J'avais toujours regardé Kant non-seulement comme une très-forte tête, mais comme le métaphysicien le plus rapproché de la philosophie positive. . . . . Pour moi, je ne me trouve jusqu'à present, après cette lecture, d'autre valeur que celle d'avoir systématisé et arrêté la conception ébauchée par Kant à mon insu, ce que je dois surtout à l'éducation scientifique; et même le pas le plus positif et le plus distinct que j'ai fait après lui, me semble seulement d'avoir découvert la loi du passage des idées humaines par les trois états théologique, métaphysique, et scientifique, loi qui me semble être la base du travail dont Kant a conseillé l'exécution. Je rends grâce aujourd'hui à mon défaut d'érudition; car si mon travail, tel qu'il est maintenant, avait été précédé chez moi par l'étude du traité de Kant, il aurait, à mes propres yeux, beaucoup perdu de sa valeur.' See Auguste Comte, par É. Littré, Paris, 1864, p. 154; Lettre de Comte à M. d'Eichthal, 10 Déc. 1824.

I ventured to point out that, as far as I could judge, amid the varying aspects of his philosophical writings, Mr. Herbert Spencer also, in what he calls his Transfigured Realism, was not very far from Kant's fundamental position. Mr. Herbert Spencer, however, has repudiated what I thought the highest compliment that could be paid to any writer on philosophy, and I feel bound therefore to withdraw my conjecture.

But although, whether consciously or unconsciously, all truly important philosophers have, since the publication of the Critique of Pure Reason, been more or less under the spell of Kant, and indirectly of Hume and Berkeley also, this does not mean that they have not asserted their right of reopening questions which seemed to be solved and settled by those heroes in the history of human thought. Only, if any of these old problems are to be taken up again, they ought at least to be taken up where they were last left. Unless that is done, philosophy will become a mere amusement, and will in no wise mark the deep vestiges in the historical progress of the human intellect. There are anachronisms in philosophy, quite as much as in other sciences, and the spirit in which certain philosophical problems have of late been treated, both in England and in Germany, is really no better than a revival of the Ptolemaic system would be in astronomy. No wonder, therefore, that in both countries we should meet with constant complaints about this state of philosophical anarchy. Mr. Challis in one of the last numbers of the *Contemporary Review* (November, 1881), writes:

'It is another familiar fact, a much more important one, that the present state of philosophy is exactly parallel to the present state of theology,—a chaos of conflicting schools, each able to edify itself without convincing any other, every one regarding all the rest, not as witnesses against itself, but as food for dialectical powder and shot. The impartial by-stander sees no sign that we are now nearer to agreement than in the days of Varro; though the enthusiast of a school expects the world to be all some day of his opinion, just as the enthusiast of a sect believes vaguely in an ultimate triumph of his faith.'

Exactly the same complaint reaches us from the very country where Kant's voice was once so powerful and respected, then was silenced for a time, and now begins to be invoked again for the purpose of restoring order where all seems confusion. 'Since the year 1840,' writes Dr. Vaihinger, 'there has been hopeless philosophical anarchy in Germany. There were the disciples of Schelling, Hegel, Herbart, and Schopenhauer, and, by their side, the founders and defenders of many unknown systems of philosophy. Then followed the so-called Real-Idealists, or Ideal-Realists, who distilled a philosophical theism out of the pantheism of greater thinkers, and, as their antipodes, the Materialists, who on the new discoveries of natural science founded the saddest, shallowest, and emptiest system of philosophy[1].'

[1] Vaihinger, Zum Jubiläum von Kant's Kritik der reinen Vernunft, p. 11.

In England and America, even more than in Germany, I believe that a study of Kant holds out the best hope of a philosophical rejuvenescence. In Germany a return to Kant is a kind of *Renaissance;* in England and America Kant's philosophy, if once thoroughly understood, will be, I hope, a new birth. No doubt there are, and there have been in every country of Europe some few honest students who perfectly understood Kant's real position in the onward march of human thought. But to the most fertile writers on philosophy, and to the general public at large, which derives its ideas of philosophy from them, Kant's philosophy has not only been a *terra incognita*, but the very antipodes of what it really is. Mr. Watson, in his instructive work, 'Kant and his English Critics,' is perfectly right when he says that, till very lately, Kant was regarded as a benighted *a priori* philosopher of the dogmatic type, afflicted with the hallucination that the most important part of our knowledge consists of innate ideas, lying in the depths of consciousness, and being capable of being brought to the light by pure introspection.' That Kant was the legitimate successor of Hume on one side, and of Berkeley on the other, was hardly conceived as possible. And thus it has happened that English philosophy, in spite of the large number of profound thinkers and brilliant writers who have served in its ranks during the last hundred years, has not yet risen above the level of Locke and Hume. No one can admire more than I do the dashing style in which some of the most popular

writers of our time have ridden up to the very muzzles of the old philosophical problems, but if I imagine Kant looking back from his elevated position on those fierce and hopeless onslaughts, I can almost hear him say what was said by a French general at Balaclava: *C'est magnifique,—mais ce n'est pas la guerre.* Quite true it is that but for Hume, and but for Berkeley, Kant would never have been, and philosophy would never have reached the heights which he occupies. But, after Kant, Hume and Berkeley have both an historical significance only. They represent a position which has been conquered and fortified, and has now been deliberately left behind.

Professor Noiré, when he had written for this work the antecedents of Kant's philosophy, sent me another most valuable contribution, containing a full analysis of that philosophy, considered not only as the continuation, but as the fulfilment of all other philosophical systems, and more particularly of the systems of Berkeley and Hume. For that work it was unfortunately impossible to find room in these volumes; but I am glad to know that it will not be withheld, in German at least, from those who, both in England and in Germany, have learnt to appreciate Professor Noiré's accurate and luminous statements. Leaving therefore the task of tracing minutely the intimate relation between Kant and his predecessors to the more experienced hand of my friend, I shall here be satisfied with pointing out in the broadest way the connection, and, at the same time, the diametrical opposition between Kant

and those two great heroes of speculative thought, Berkeley and Hume.

Berkeley holds that all knowledge that seems to come to us from without through the senses or through experience is mere illusion, and that truth exists in the ideas of the pure understanding and of reason only.

Kant proves that all knowledge that comes to us from pure understanding and from pure reason only is mere illusion, and that truth is impossible without experience.

Hume holds that true causality is impossible, whether in experience or beyond experience.

Kant proves that experience itself is impossible without the category of causality, and, of course, without several other categories also which Hume had overlooked, though they possess exactly the same character as the concept of causality[1]. The gist of Kant's philosophy, as opposed to that of Hume, can be expressed in one line: That without which experience is impossible, cannot be the result of experience, though it must never be applied beyond the limits of possible experience.

Such broad statements and counter-statements may seem to destroy the finer shades of philosophical thought, yet in the end even the most complicated and elaborate systems of philosophy rest on such broad foundations; and what we carry about with us of Plato or Aristotle, of Descartes or Leibniz, consists

[1] This is Kant's statement, though it is not quite accurate. See Adamson, On the Philosophy of Kant, p. 202. That Kant knew Hume's *Treatise on Human Nature* seems to follow from Hamann's *Metakritik über den Purismus der reinen Vernunft*, p. 3, note.

in the end of little more than a few simple outlines of the grand structures of their philosophical thoughts. And in that respect no system admits of being traced in simpler and broader outlines than that of Kant. Voluminous and complicated it is, and yet Kant himself traces in a few lines the outcome of it, when he says (Critique, p. 712 (830): 'But it will be said, is this really all that pure reason can achieve, in opening prospects beyond the limits of experience? Nothing more than two articles of faith? Surely even the ordinary understanding could have achieved as much without taking counsel of philosophers!

'I shall not here dwell on the benefits,' he answers, 'which, by the laborious efforts of its criticism, philosophy has conferred on human reason, granting even that in the end they should turn out to be merely negative. On this point something will have to be said in the next section. But, I ask, do you really require that knowledge, which concerns all men, should go beyond the common understanding, and should be revealed to you by philosophers only? The very thing which you find fault with is the best confirmation of the correctness of our previous assertions, since it reveals to us, what we could not have grasped before, namely, that in matters which concern all men without distinction, nature cannot be accused of any partial distribution of her gifts; and that, with regard to the essential interests of human nature, the highest philosophy can achieve no more than that guidance which nature has vouchsafed even to the meanest understanding.'

I hope that the time will come when Kant's works, and more particularly his Critique of Pure Reason, will be read, not only by the philosopher by profession, but by everybody who has once seen that there are problems in this life of ours the solution of which alone makes life worth living. These problems, as Kant so often tells us, are all the making of reason, and what reason has made, reason is able to unmake. These problems represent in fact the mythology of philosophy, that is, the influence of dying or dead language on the living thought of each successive age; and an age which has found the key to the ancient mythology of religion, will know where to look for the key that is to unlock the mythology of pure reason. Kant has shown us what can and what cannot be known by man. What remains to be done, even after Kant, is to show how man came to believe that he could know so much more than he can know, and this will have to be shown by a Critique of Language[1].

How strange it is that Kant's great contemporary, 'the Magus of the North,' should have seen this at once, and that for a whole century that thought has

[1] What I mean by this, may be seen in the last Lecture of the Second Series of my *Lectures on the Science of Language*, delivered in 1867 (ed. 1880, vol. ii. p. 612 seq.); in my article On the Origin of Reason, *Contemporary Review*, February, 1878; my Lectures on Mr. Darwin's Philosophy of Language, *Fraser's Magazine*, May, 1873; also in Professor Noiré's works, *Der Ursprung der Sprache*, 1877; and *Max Müller and the Philosophy of Language* (Longmans, 1879). One important problem, in the solution of which I differ from Kant, or rather give a new application to Kant's own principles, has been fully treated in my *Hibbert Lectures*, 1878, pp. 30 seq.

remained dormant. 'Language,' Hamann writes, 'is not only the foundation for the whole faculty of thinking, but the central point also from which proceeds the misunderstanding of reason by herself.' And again[1]: 'The question with me is not, What is Reason? but, What is Language? And here I suspect is the ground of all paralogisms and antinomies with which Reason has been charged.' And again: 'Hence I feel almost inclined to believe that our whole philosophy consists more of language than of reason, and the misunderstanding of numberless words, the prosopopœias of the most arbitrary abstraction, the antitheses τῆς ψευδωνύμου γνώσεως; nay, the commonest figures of speech of the *sensus communis* have produced a whole world of problems, which can no more be raised than solved. What we want is a *Grammar of Reason.*'

That Kant's Critique will ever become a popular book, in the ordinary sense of the word, is impossible; but that it will for ever occupy a place in the small tourist's library which every thoughtful traveller across this short life's journey will keep by his side, I have no doubt. Kant, it must be admitted, was a bad writer, but so was Aristotle, so was Descartes, so was Leibniz, so was Hegel; and, after a time, as in climbing a mountain, the very roughness of the road becomes an attraction to the traveller. Besides, though Kant is a bad builder, he is not a bad architect, and there will be few patient readers of the Critique who will fail to understand Goethe's expression that on reading Kant, or rather, I should

[1] Gildemeister, Hamann's Leben und Schriften, vol. iii. p. 71.

say, on reading Kant again and again, we feel like stepping into a lighted room. I have tried hard, very hard, to remove some of the darkness which has hitherto shrouded Kant's masterwork from English readers, and though I know how often I have failed to satisfy myself, I still hope I shall not have laboured quite in vain. Englishmen who, in the turmoil of this century, found leisure and mental vigour enough to study once more the thoughts of Plato, and perceived their bearing on the thoughts of our age, may well brace themselves to the harder work of discovering in Kant the solution of many of the oldest problems of our race, problems which, with most of us, are still the problems of yesterday and of to-day. I am well aware that for Kant there is neither the prestige of a name, such as Plato, nor the cunning of a translator, such as Jowett. But a thinker who in Germany could make himself listened to during the philosophical apathy of the Wolfian age, who from his ultima Thule of Königsberg could spring forward to grasp the rudder of a vessel, cast away as unseaworthy by no less a captain than Hume, and who has stood at the helm for more than a century, trusted by all whose trust was worth having, will surely find in England, too, patient listeners, even though they might shrink, as yet, from embarking in his good ship in their passage across the ocean of life.

Kant's Metaphysic in relation to Physical Science.

We live in an age of physical discovery, and of complete philosophical prostration, and thus only can

we account for the fact that physical science, and, more particularly, physiology, should actually have grasped at the sceptre of philosophy. Nothing, I believe, could be more disastrous to both sciences.

No one who knows my writings will suspect me of undervaluing the progress which physical studies have made in our time, or of ignoring the light which they have shed on many of the darkest problems of the mind. Only let us not unnecessarily move the old landmarks of human knowledge. There always has been, and there always must be, a line of demarcation between physical and metaphysical investigations, and though the former can illustrate the latter, they can never take their place. Nothing can be more interesting, for instance, than recent researches into the exact processes of sensuous perception. Optics and Acoustics have carried us deep into the inner workings of our bodily senses, and have enabled us to understand what *we* call colours and sounds, as vibrations, definite in number, carried on from the outer organs through vibrating media to the brain and the inmost centre of all nervous activity. Such observations have, no doubt, made it more intelligible, even to the commonest understanding, what metaphysicians mean when they call all secondary qualities subjective, and deny that anything can be, for instance, green or sweet, anywhere but in the perceiving subject. But the idea that these physical and physiological researches have brought us one inch nearer to the real focus of subjective perception, that any movement of matter could in any way explain the simplest sensuous perception, or that behind the membranes

and nerves we should ever catch hold of what we call the soul, or the I, or the self, need only to be stated to betray its utter folly. That men like Helmholtz and Du Bois-Reymond should find Kant's metaphysical platform best adapted for supporting their physical theories is natural enough. But how can any one who weighs his words say that the modern physiology of the senses has in any way supplemented or improved Kant's theory of knowledge[1]? As well might we say that spectrum analysis has improved our logic, or the electric light supplemented our geometry. 'Empirical psychology,' as Kant says, 'must be entirely banished from metaphysic, and is excluded from it by its very idea[2].'

Metaphysical truth is wider than physical truth, and the new discoveries of physical observers, if they are to be more than merely contingent truths, must find their appointed place and natural refuge within the immoveable limits traced by the metaphysician. It was an unfortunate accident that gave to what ought to have been called pro-physical, the name of metaphysical science, for it is only after having mastered the principles of metaphysic that the student of nature can begin his work in the right spirit, knowing the horizon of human knowledge, and guided by principles as unchangeable as the pole star. It would be childish to make this a question of rank or precedence; it is simply a question of work and order.

It may require, for instance, a greater effort,

[1] See Noiré, in Die Gegenwart, June 23, 1881.

[2] Critique, p. 728 (848).

and display more brilliant mental qualities, to show that nature contains no traces of repeated acts of special creation, than to prove that such a theory would make all unity of experience, and consequently all science, impossible. But what are all the negative arguments of the mere observer without the solid foundation supplied by the metaphysician? And with how much more of tranquil assurance would the geologist pursue his observations and develop his conclusions, if he just remembered these few lines of Kant: 'When such an arising is looked upon as the effect of a foreign cause, it is called *creation*. This can never be admitted as an event among phenomena, because its very possibility would destroy unity of experience[1].'

What can have been more delightful to the unprejudiced observer than the gradual diminution of the enormous number of what were called by students of nature, who had never troubled their heads about the true meaning of these terms, genera and species? But when the true meaning, and thereby the true origin, of genera and species was to be determined, is it not strange that not one word should ever have been said on the subjective character of these terms? Whatever else a genus or species may be, surely they are, first of all, concepts of the understanding, and, without these concepts, whatever nature might present to us, nothing would ever be to us a genus or a species.

Now the genus and species, in that restricted sense, as applied to organic beings, represent only

[1] Critique, p. 180 (206).

one side of that fundamental process on which all thought is founded, namely, the conception of the General and the Special. Here, again, a few pages of Kant[1] would have shown that the first thing to be explained is the process by which we conceive the genus or the general, and that the only adequate explanation of it is what Kant calls its transcendental deduction, i.e. the proof that, without it, experience itself would be impossible; and that therefore, so far from being a concept abstracted from experience, it is a *sine qua non* of experience itself.

If this is once clearly understood, it will be equally understood that, as we are the makers of all concepts, we are also the makers of *genera and species*, and that long before logicians came to define and deface these terms, they were what we now are anxious to make them again, terms for objects which have either a common origin, or a common form. Long before Aristotle forced the terms γένος and εἶδος to assume a subordinate relation to each other, language, or the historical logic of the human race, had formed these terms, and meant them to be co-ordinate.

Genos meant *kin*, and the first *genos* was the *gens* or the family, comprehending individuals that could claim a common ancestor, though differing in appearance as much as a grandfather and a babe. *Eidos* or *species*, on the contrary, meant appearance or form, and the first *eidos* was probably the troop of warriors, comprehending individuals of uniform appearance, nothing being asserted as to their common origin. This was the historic or prehistoric beginning of these

[1] Critique of Pure Reason, p. 559 (pp. 652 seq.).

two fundamental categories of thought—and what has the theory of evolution really done for them? It has safely brought them back to their original meaning. It has shown us that we can hold together, or comprehend, or conceive, or classify, or generalise or speak in two ways, and in two ways only—either by common descent (genealogically), or by common appearance (morphologically). Difference of form is nothing, if we classify genealogically, and difference of descent is nothing, if we classify morphologically. What the theory of evolution is doing for us is what is done by every genealogist, ay, what was done in ancient time by every paterfamilias, namely, to show by facts that certain individuals, however different from each other in form and appearance, had a common ancestor, and belonged therefore to the same family or kin. In every case where such proof has been given, we gain in reality a more correct general concept, i. e. we are able to think and to speak better. The process is the same, whether we trace the Bourbons and Valois back to Hugo Capet, or whether we derive the Hippos and the Hipparion from a common ancestor. In both cases we are dealing with facts and with facts only. Let it be established that there is no missing link between them, or between man and monkey, and we shall simply have gained a new concept, as we should gain a new concept by establishing the unbroken continuity of the Apostolic succession. Only let us see clearly that in physical and historical researches, too, we are dealing with facts, and with facts only, which cannot excite any passion, and that the wider issues as to the origin of

genera and species belong to a different sphere of human knowledge, and after having been debated for centuries, have been determined once for all by Kant's Critique of Pure Reason.

If one remembers the dust-clouds of words that were raised when the question of the origin of species was mooted once more in our days, it is truly refreshing to read a few of Kant's calm pages on that subject, written one hundred years ago. 'Reason[1],' he writes, 'prepares the field for the understanding,

'1st. Through the principle of *homogeneousness* of the manifold as arranged under higher genera;

'2ndly. Through the principle of the *variety* of the homogeneous in lower species; to which,

'3rdly, it adds a law of *affinity* of all concepts, which requires a continual transition from every species to every other species, by a gradual increase of diversity. We may call these the principles of *homogeneousness*, of *specification* and of *continuity* of forms.'

And with reference to the practical application of these metaphysical principles to the study of nature, he writes again with true philosophical insight[2]: 'I often see even intelligent men quarrelling with each other about the characteristic distinctions of men, animals, or plants, nay, even of minerals, the one admitting the existence of certain national characteristics, founded on descent, or decided and inherited differences of families, races, etc., while others insist that nature has made the same provision for all, and that all differences are due to accidental environment. But

[1] Critique, p. 564 (657).
[2] Ibid. p. 572 (667).

they need only consider the peculiar character of the matter, in order to understand that it is far too deeply hidden for both of them to enable them to speak from any real insight into the nature of the object. It is nothing but the twofold interest of reason, one party cherishing the one, another party the other, or pretending to do so. But this difference of the two maxims of manifoldness and unity in nature, may easily be adjusted, though as long as they are taken for objective knowledge they cause not only disputes, but actually create impediments which hinder the progress of truth, until a means is found of reconciling the contradictory interests, and thus giving satisfaction to reason.

'The same applies to the assertion or denial of the famous law of the *continuous scale* of created beings, first advanced by Leibniz, and so cleverly trimmed up by Bonnet. It is nothing but a carrying out of the principle of affinity resting on the interest of reason, for neither observation, nor insight into the constitution of nature could ever have supplied it as an objective assertion. The steps of such a ladder, as far as they can be supplied by experience, are far too wide apart from each other, and the so-called small differences are often in nature itself such wide gaps, that no value can be attached to such observations as revealing the intentions of nature, particularly as it must always be easy to discover certain similarities and approximations in the great variety of things. The method, on the contrary, of looking for order in nature, according to such a principle, and the maxim of admitting such order (though it may be uncertain

where and how far) as existing in nature in general, is certainly a legitimate and excellent regulative principle of reason, only that, as such, it goes far beyond where experience or observation could follow it. It only indicates the way which leads to systematical unity, but does not determine anything beyond.'

I know, of course, what some of my philosophical friends will say. 'You speak of thoughts,' they will say, 'we speak of facts. You begin with the general, we begin with the particular. You trust to reason, we trust to our senses.' Let me quote in reply one of the most positive of positive philosophers, one who trusts to the senses, who begins with the particular, and who speaks of facts. Condillac in his famous 'Essai sur l'Origine des Connaissances humaines,' writes: 'Soit que nous nous élevions, pour parler métaphoriquement, jusque dans les cieux, soit que nous descendions dans les abîmes, nous ne sortons pas de nous-mêmes; et ce n'est jamais que notre pensée que nous apercevons.' This was written in 1746.

And what applies to these, applies to almost all other problems of the day. Instead of being discussed by themselves, and with a heat and haste as if they had never been discussed before, they should be brought back to the broader ground from which they naturally arise, and be treated by the light of true philosophy and the experience gained in former ages. There is a solid ground formed by the thoughts of those who came before us, a kind of intellectual *humus* on which we ourselves must learn to march on cautiously, yet safely, without needing those high

stilts which seem to lift our modern philosophers above the level of Locke, and Hume, and Kant, and promise to enable them to advance across the unknown and the unknowable with wider strides than were ever attempted by such men as Faraday, or Lyell, or Darwin, but which invariably fall away when they are most needed, and leave our bold speculators to retrace their steps as best they can.

Kant's Philosophy as judged by History.

If my translation of Kant were intended for a few professional philosophers only, I should not feel bound to produce any credentials in his favour. But the few true students of philosophy in England do not want a translation. They would as little attempt to study Kant, without knowing German, as to study Plato, without knowing Greek. What I want, and what I hope for is that that large class of men and women whose thoughts, consciously or unconsciously, are still rooted in the philosophy of the last century, and who still draw their intellectual nutriment from the philosophical soil left by Locke and Hume, should know that there is a greater than Locke and Hume, though himself the avowed pupil and the truest admirer of those powerful teachers. Kant is not a man that requires testimonials; we might as well require testimonials of Plato or Spinoza. But to the English reader it may be of interest to hear at least a few of the utterances of the great men whose merit it is to have discovered Kant, a discovery that may well be called the discovery of a new world.

What Goethe said of Kant, we have mentioned before. Schiller, after having declared that he was determined to master Kant's Critique, and if it were to cost him the whole of his life, says: 'The fundamental ideas of Kant's ideal philosophy will remain a treasure for ever, and for their sake alone we ought to be grateful to have been born in this age.'

Strange it is to see how orthodox theologians, from mere laziness, it would seem, in mastering Kant's doctrines, raised at once a clamour against the man who proved to be their best friend, but whose last years of life they must needs embitter. One of the most religious and most honest of Kant's contemporaries, however, Jung Stilling, whose name is well known in England also, quickly perceived the true bearing of the Critique of Pure Reason. In a letter, dated March 1, 1789, Jung Stilling writes to Kant: 'You are a great, a very great instrument in the hand of God. I do not flatter,—but your philosophy will work a far greater, far more general, and far more blessed revolution than Luther's Reform. As soon as one has well comprehended the Critique of Reason, one sees that no refutation of it is possible. Your philosophy must therefore be eternal and unchangeable, and its beneficent effects will bring back the religion of Jesus to its original purity, when its only purpose was—holiness.'

Fichte, no mean philosopher himself, and on many points the antagonist of Kant, writes: 'Kant's philosophy will in time overshadow the whole human race, and call to life a new, more noble, and more worthy generation.'

Jean Paul Friedrich Richter speaks of Kant 'not only as a light of the world, but as a whole solar system in one.'

With more suppressed, yet no less powerful appreciation Wilhelm von Humboldt writes of him: 'Some things which he demolished will never rise again; some things which he founded will never perish again. A reform such as he carried through is rare in the history of philosophy.'

Schopenhauer, the most fearless critic of Kant's Critique, calls it 'the highest achievement of human reflection.' What he has written of Kant is indispensable indeed to every student of the Critique, and I deeply regret that I could not have added to my translation of Kant a translation of Schopenhauer's critical remarks.

I must add, however, one paragraph: 'Never,' Schopenhauer writes in his Parerga (1,183), 'never will a philosopher, without an independent, zealous, and often repeated study of the principal works of Kant, gain any idea of this most important of all philosophical phenomena. Kant is, I believe, the most philosophical head that nature has ever produced. To think with him and according to his manner is something that cannot be compared to anything else, for he possessed such an amount of clear and quite peculiar thoughtfulness as has never been granted to any other mortal. We are enabled to enjoy this with him, if, initiated by patient and serious study, we succeed, while reading the profoundest chapters of the Critique of Pure Reason, in forgetting ourselves and thinking really with

Kant's own head, thus being lifted high above ourselves. If we go once more through the Principles of Pure Reason, and, more particularly, the Analogies of Experience, and enter into the deep thought of the synthetical unity of apperception, we feel as if lifted miraculously and carried away out of the dreamy existence in which we are here lost, and as if holding in our hands the very elements out of which that dream consists.'

If, in conclusion, we look at some of the historians of modern philosophy, we find Erdmann, though a follower of Hegel, speaking of Kant as 'the Atlas that supports the whole of German philosophy.'

Fortlage, the Nestor of German philosophers[1], who wrote what he calls a Genetic History of Philosophy since Kant, speaks of him in the following terms: 'In one word, Kant's system is the gate through which everything that has stirred the philosophical world since his time, comes and goes. It is the Universal Exchange where all circulating ideas flow together before they vanish again in distant places. It is the London of philosophy, sending its ships into every part of the world, and after a time receiving them back. There is no place in the whole globe of human thought which it has not visited, explored, and colonised.'

In more homely language Professor Caird expresses much the same idea of Kant's philosophy, when he says (p. 120): 'So much has Kant's fertile idea changed the aspect of the intellectual world, that there is not a single problem of philosophy that

[1] He died November, 1881.

does not meet us with a new face; and it is perhaps not unfair to say, that the speculations of all those who have not learned the lesson of Kant, are beside the point.'

Dr. Vaihinger, who has devoted his life to the study of Kant, and is now bringing out a commentary in four volumes on his Critique of Pure Reason[1], sums up his estimate in the following words: 'The Critique is a work to which, whether we look to the grandeur of conception, or the accuracy of thought, or the weight of ideas, or the power of language, few only can be compared—possibly Plato's Republic, Aristotle's Metaphysics, Spinoza's Ethics—none, if we consider their lasting effect, their penetrating and far-reaching influence, their wealth of thought, and their variety of suggestions[2].'

Nearly the same judgment is repeated by Vacherot[3], who speaks of the Critique as 'un livre immortel, comme l'Organum de Bacon et le Discours de la Méthode de Descartes,' while Professor Noiré, with his wider sympathies for every sphere of intellectual activity, counts six books, in the literature of modern Europe, as the peers of Kant's Critique, viz. Copernicus, De revolutionibus orbium cœlestium (1543); Descartes, Meditationes de prima philosophia

[1] Commentar zu Kant's Kritik der reinen Vernunft, zum hundertjährigen Jubiläum derselben, herausgegeben von Dr. H. Vaihinger. Stuttgart, 1881.

[2] Zum Jubiläum von Kant's Kritik der reinen Vernunft, von H. Vaihinger, Separatabdruck aus der Wochenschrift, 'Im neuen Reich,' 1881, No. 23, p. 14.

[3] Revue des deux Mondes, 1879, Août.

(1641); Newton, Principia philosophiæ naturalis mathematica (1687); Montesquieu, Esprit des Lois (1748); Winckelmann, Geschichte der Kunst des Alterthums (1764); and Adam Smith, Inquiry into the nature and causes of the Wealth of Nations (1776),—but he places Kant's Critique at the head of them all.

I confess I feel almost ashamed lest it should be supposed that I thought Kant in need of these testimonies. My only excuse is that I had to defend myself against the suspicion of having wasted my time, and I therefore thought that by pointing out the position assigned to Kant's Critique among the master-works of human genius by men of greater weight than I could ever venture to claim for myself, I might best answer the kindly meant question addressed to me by my many friends: '*But how can you waste your time on a translation of Kant's Critik der reinen Vernunft?*'

On the Text of Kant's Critique of Pure Reason.

I have still to say a few words on the German text on which my translation is founded.

I have chosen the text of the First Edition, first of all, because it was the centenary of that edition which led me to carry out at last my long-cherished idea of an English translation. That text represents an historical event. It represents the state of philosophy, as it was then, it represents Kant's mind as it was then, at the moment of the greatest crisis in the history of philosophy. Even if the later editions contained improvements, these improvements would belong to a later phase in Kant's own development,

and it is this first decisive position, as taken by Kant against both Hume and Berkeley, that more than anything else, deserves to be preserved in the history of philosophy.

Secondly, I must confess that I have always used myself the First Edition of Kant's Critique, and that when I came to read the Second Edition, I never could feel so at home in it as in the first. The First Edition seems to me cut out of one block, the second always leaves on my mind the impression of patchwork.

Thirdly, I certainly dislike in the Second Edition a certain apologetic tone, quite unworthy of Kant. He had evidently been attacked by the old Wolfian professors, and also by the orthodox clergy. He knew that these attacks were groundless, and arose in fact from an imperfect understanding of his work on the part of his critics. He need not have condescended to show that he was as well-schooled a philosopher as any of his learned colleagues, or that his philosophy would really prove extremely useful to orthodox clergymen in their controversies with sceptics and unbelievers.

So far, and so far only, can I understand the feeling against the Second Edition, which is shared by some of the most accurate and earnest students of Kant.

But I have never been able to understand the exaggerated charges which Schopenhauer and others bring against Kant, both for the omissions and the additions in that Second Edition. What I can understand and fully agree with is Jacobi's opinion, when

he says[1]: 'I consider the loss which the Second Edition of Kant's Critique suffered by omissions and changes very considerable, and I am very anxious by the expression of my opinion to induce readers, who seriously care for philosophy and its history, to compare the first edition of the Critique of Pure Reason with the second improved edition. . . . It is not sufficiently recognised what an advantage it is to study the systems of great thinkers in their first original form. I was told by Hamann that the very judicious Ch. J. Krause (or Kraus) could never sufficiently express his gratitude for having been made acquainted with Hume's first philosophical work, Treatise on Human Nature, 1739, where alone he had found the right point of view for judging the later essays.'

Nor do I differ much from Michelet, in his History of the later systems of Philosophy in Germany (1837, vol. i. p. 49), where he says, 'Much that is of a more speculative character in the representation of Kant's system has been taken from the First Edition. It can no longer be found in the second and later editions, which, as well as the Prolegomena, keep the idealistic tendency more in the background, because Kant saw that this side of his philosophy had lent itself most to attacks and misunderstandings.'

I can also understand Schopenhauer, when he states that many things that struck him as obscure and self-contradictory in Kant's Critique ceased to be so when he came to read that work in its first original form. But everything else that Schopenhauer writes on the difference between the first and second editions of the

[1] Jacobi's Works, vol. ii. p. 291 (1815).

Critique seems to me perfectly intolerable. Kant, in the Preface to his Second Edition, which was published six years after the first, in 1787, gives a clear and straightforward account of the changes which he introduced. 'My new representation,' he writes, 'changes absolutely nothing with regard to my propositions and even the arguments in their support.' He had nothing to retract, but he thought he had certain things to add, and he evidently hoped he could render some points of his system better understood. His freedom of thought, his boldness of speech, and his love of truth are, if I am any judge in these matters, the same in 1787 as in 1781. The active reactionary measures of the Prussian Government, by which Kant is supposed to have been frightened, date from a later period. Zedlitz, Kant's friend and protector, was not replaced by Wöllner as minister till 1788. It was not till 1794 that Kant was really warned and reprimanded by the Cabinet, and we must not judge too harshly of the old philosopher when at his time of life, and in the then state of paternal despotism in Prussia, he wrote back to say 'that he would do even more than was demanded of him, and abstain in future from all public lectures concerning religion, whether natural or revealed.' What he at that time felt in his heart of hearts we know from some remarks found after his death among his papers. 'It is dishonourable,' he writes, 'to retract or deny one's real convictions, but silence, in a case like my own, is the duty of a subject; and though all we say must be true, it is not our duty to declare publicly all that is true.'

Kant never retracted, he never even declared himself no longer responsible for any one of those portions of the Critique which he omitted in the Second Edition. On the contrary, he asked his readers to look for them in the First Edition, and only expressed a regret that there was no longer room for them in the Second Edition.

Now let us hear what Schopenhauer says. He not only calls the Second Edition 'crippled, disfigured, and corrupt,' but imputes motives utterly at variance with all we know of the truthful, manly, and noble character of Kant. Schopenhauer writes: 'What induced Kant to make these changes was fear of man, produced by weakness of old age, which not only affects the head, but sometimes deprives the heart also of that firmness which alone enables us to despise the opinions and motives of our contemporaries, as they deserve to be. No one can be great without that.'

All this is simply abominable. First of all, as a matter of fact, Kant, when he published his Second Edition, had not yet collapsed under the weakness of old age. He was about sixty years of age, and that age, so far from making cowards of us, gives to most men greater independence and greater boldness than can be expected from the young, who are awed by the authority of their seniors, and have often to steer their course prudently through the conflicts of parties and opinions[1]. What is the use of grow-

[1] 'En général la vigueur de l'esprit, soit dans la politique, soit dans la science, ne se déploie dans toute sa plénitude qu'à l'âge où l'activité vitale vient à s'affaiblir.' E. Saisset, L'Âme et la Vie, p. 60.

ing old, if not to gain greater confidence in our opinions, and to feel justified in expressing them with perfect freedom? And as to 'that firmness which alone enables us to despise the opinions and motives of our contemporaries,' let us hope that that is neither a blessing of youth nor of old age. Schopenhauer personally, no doubt, had a right to complain of his contemporaries, but he would have been greater if he had despised them either less or more, or, at all events, if he had despised them in silence.

I am really reluctant to translate all that follows, and yet, as Schopenhauer's view has found so many echoes, it seems necessary to let him have his say.

'Kant had been told,' he continues, 'that his system was only a *réchauffé* of Berkeley's Idealism. This seemed to him to endanger that invaluable and indispensable originality which every founder of a system values so highly (see Prolegomena zu jeder künftigen Metaphysik, pp. 70, 202 sq.). At the same time he had given offence in other quarters by his upsetting of some of the sacred doctrines of the old dogmas, particularly of those of rational psychology. Add to this that the great king, the friend of light and protector of truth, had just died (1786). Kant allowed himself to be intimidated by all this, and had the weakness to do what was unworthy of him. This consists in his having entirely changed the first chapter of the Second Book of the Transcendental Dialectic (first ed., p. 341), leaving out fifty-seven pages, which contained what was indispensable for a clear understanding of the whole work, and by the omission of which, as well as by

what he put in its place, his whole doctrine becomes full of contradictions. These I pointed out in my critique of Kant (pp. 612–18), because at that time (in 1818) I had never seen the First Edition, in which they are really not contradictions, but agree perfectly with the rest of his work. In truth the Second Edition is like a man who has had one leg amputated, and replaced by a wooden one. In the preface to the Second Edition (p. xlii), Kant gives hollow, nay, untrue excuses for the elimination of that important and extremely beautiful part of his book. He does not confessedly wish that what was omitted should be thought to have been retracted by him. "People might read it in the First Edition," he says; "he had wanted room for new additions, and nothing had been changed and improved except the representation of his system." But the dishonesty of this plea becomes clear if we compare the Second with the First Edition. There, in the Second Edition, he has not only left out that important and beautiful chapter, and inserted under the same title another half as long and much less significant, but he has actually embodied in that Second Edition a refutation of idealism which says the very contrary of what had been said in the omitted chapter, and defends the very errors which before he had thoroughly refuted, thus contradicting the whole of his own doctrine. This refutation of idealism is so thoroughly bad, such palpable sophistry, nay, in part, such a confused "galimatias," that it is unworthy of a place in his immortal work. Conscious evidently of its insufficiency, Kant has tried to im-

prove it by the alteration of one passage (see Preface, p. xxxix) and by a long and confused note. But he forgot to cancel at the same time in the Second Edition the numerous passages which are in contradiction with the new note, and in agreement with what he had cancelled. This applies particularly to the whole of the sixth section of the Antinomy of Pure Reason, and to all those passages which I pointed out with some amazement in my critique (which was written before I knew the First Edition and its later fate), because in them he contradicts himself. That it was fear which drove the old man to disfigure his Critique of rational psychology is shown also by this, that his attacks on the sacred doctrines of the old dogmatism are far weaker, far more timid and superficial than in the First Edition, and that, for the sake of peace, he mixed them up at once with anticipations which are out of place, nay, cannot as yet be understood, of the immortality of the soul, grounded on practical reason and represented as one of its postulates. By thus timidly yielding he has in reality retracted, with regard to the principal problem of all philosophy, viz. the relation of the ideal to the real, those thoughts which he had conceived in the vigour of his manhood and cherished through all his life. This he did in his sixty-fourth year with a carelessness, which is peculiar to old age quite as much as timidity, and he thus surrendered his system, not however openly, but escaping from it through a back-door, evidently ashamed himself of what he was doing. By this process the Critique of Pure Reason has, in its Second Edition, become a self-

contradictory, crippled, and corrupt book, and is no longer genuine.'

'The wrong interpretation of the Critique of Pure Reason, for which the successors of Kant, both those who were for and those who were against him, have blamed each other, as it would seem, with good reason, are principally due to the so-called improvements, introduced into his work by Kant's own hand. For who can understand what contradicts itself?'

The best answer to all this is to be found in Kant's own straightforward statements in the Preface to his Second Edition (Supplement II. pp. 364 seqq.). That the unity of thought which pervades the First Edition is broken now and then in the Second Edition, no attentive reader can fail to see. That Kant shows rather too much anxiety to prove the harmlessness of his Critique, is equally true, and it would have been better if, while refuting what he calls Empirical Idealism, he had declared more strongly his unchanged adherence to the principles of Transcendental Idealism[1]. But all this leaves Kant's moral character quite untouched. If ever man lived the life of a true philosopher, making the smallest possible concessions to the inevitable vanities of the world, valuing even the shadowy hope of posthumous fame[2] at no more than its proper worth, but fully enjoying the true enjoyments of this life, an unswerving devotion to truth, a consciousness of righteousness, and a sense of perfect independence, that man was Kant. If it is true that on some

[1] See Critique, p. 320 (369).

[2] See Critique of Pure Reason, Supp. XXVII. p. 508.

points which may seem more important to others than they seemed to himself, he changed his mind, or, as we should now say, if there was a later development in his philosophical views, this would seem to me simply to impose on every student the duty, which I have tried to fulfil as a translator also, viz. first of all, to gain a clear view of Kant's system from his First Edition, and then to learn, both from the additions and from the omissions of the Second Edition, on what points Kant thought that the objections raised against his theory required a fuller and clearer statement of his arguments.

The additions of the Second Edition will be found on pp. 361–512, of the first volume, while the passages omitted in the Second Edition have been included throughout between parentheses.

Critical Treatment of the Text of Kant's Critique.

The text of Kant's Critique has of late years become the subject of the most minute philological criticism, and it certainly offers as good a field for the exercise of critical scholarship as any of the Greek and Roman classics.

We have, first of all, the text of the First Edition, full of faults, arising partly from the imperfect state of Kant's manuscript, partly from the carelessness of the printer. Kant received no proof-sheets, and he examined the first thirty clean sheets, which were in his hands when he wrote the preface, so carelessly that he could detect in them only one essential misprint. Then followed the Second, 'here and there

improved,' Edition (1787), in which Kant not only omitted and added considerable passages, but paid some little attention also to the correctness of the text, improving the spelling and the stopping, and removing a number of archaisms which often perplex the reader of the First Edition.

We hardly know whether these minor alterations came from Kant himself, for he is said to have been firmly attached to the old system of orthography[1]; and it seems quite certain that he himself paid no further attention to the later editions, published during his lifetime, the Third Edition in 1790, the Fourth in 1794, the Fifth in 1799.

At the end of the Fifth Edition of the Critique of Pure Reason, published in 1799, there is a long list of Corrigenda, the authorship of which has exercised the critical students of Kant's text very much. No one seems to have thought of attributing it to Kant himself, who at that time of life was quite incapable of such work. Professor B. Erdmann supposed it might be the work of Rink, or some other amanuensis of Kant. Dr. Vaihinger has shown that it is the work of a Professor Grillo, who, in the *Philosophische Anzeiger*, a Supplement to L. H. Jacob's *Annalen der Philosophie und des philosophischen Geistes*, 1795, published a collection of *Corrigenda*, not only for Kant's Critique of Pure Reason, but for several other of his works also. Another contributor to the same journal, Meyer, thereupon defended Kant's publisher (Hartknoch) against the charges of carelessness, rejected some of Grillo's corrections, and showed that

[1] See Kehrbach, Kritik der reinen Vernunft, p. viii.

what seemed to be misprints were in many cases peculiarities of Kant's style. It is this list of Professor Grillo which, with certain deductions, has been added to the Fifth Edition of the Critique. Some of Grillo's corrections have been adopted in the text, while others, even those which Meyer had proved to be unnecessary, have retained their place in the list.

With such materials before him, it is clear that a critical student of Kant's text enjoys considerable freedom in conjectural emendation, and that freedom has been used with great success by a number of German critics. The more important are :—

Rosenkranz, in his edition of Kant's Critique (text of First Edition), 1838.

Hartenstein, in his edition of Kant's Critique (text of Second Edition), 1838, 1867.

Kehrbach, in his edition of Kant's Critique (text of First Edition), 1877.

Leclair, A. von, Kritische Beiträge zur Kategorienlehre Kant's, 1871.

Paulsen, Versuch einer Entwickelungsgeschichte der Kantischen Erkenntnisslehre, 1875.

Erdmann, B., Kritik der reinen Vernunft (text of Second Edition), 1878, with a valuable chapter on the Revision of the Text.

Many of the alterations introduced by these critics affect the wording only of Kant's Critique, without materially altering the meaning, and were therefore of no importance in an English translation. It often happens, however, that the construction of a whole sentence depends on a very slight alteration of the text. In Kant's long sentences, the gender of the

pronouns *der, die, das*, are often our only guide in discovering to what substantive these pronouns refer, while in English, where the distinction of gender is wanting in substantives, it is often absolutely necessary to repeat the substantives to which the pronouns refer. But Kant uses several nouns in a gender which has become obsolete. Thus he speaks[1] of *der Wachsthum, der Wohlgefallen, der Gegentheil, die Hinderniss, die Bedürfniss, die Verhältniss*, and he varies even between *die* and *das Verhältniss, die* and *das Erkenntniss*, etc., so that even the genders of pronouns may become blind guides. The same applies to several prepositions which Kant construes with different cases from what would be sanctioned by modern German grammar[2]. Thus *ausser* with him governs the accusative, *während* the dative, etc. For all this, and many other peculiarities, we must be prepared, if we want to construe Kant's text correctly, or find out how far we are justified in altering it.

Much has been achieved in this line, and conjectural alterations have been made by recent editors of Kant of which a Bentley or a Lachmann need not be ashamed. In cases where these emendations affected the meaning, and when the reasons why my translation deviated so much from the *textus receptus* might not be easily perceived, I have added the emendations adopted by me, in a note. Those who wish for fuller information on these points, will have to consult Dr. Vaihinger's forthcoming Commentary, which, to judge from a few specimens kindly

[1] See Erdmann, p. 637. [2] See Erdmann, p. 660.

communicated to me by the author, will give the fullest information on the subject.

How important some of the emendations are which have to be taken into account before an intelligible translation is possible, may be seen from a few specimens.

On p. 382 (442) the reading of the first edition *Antithesis* must be changed into *Thesis*.

Page 470 (545), *Noumenon* seems preferable to *Phænomenon*.

Page 420 (484), we must read *keine*, instead of *eine Wahrnehmung*.

Page 295 (340), we must keep the reading of the First Edition *transcendentalen*, instead of *transcendenten*, as printed in the Second; while on p. 578 (674), *transcendenten* may be retained, though corrected into *transcendentalen* in the *Corrigenda* of the Fifth Edition.

On p. 670 (781), the First Edition reads, *sind also keine Privatmeinungen*. Hartenstein rightly corrects this into *reine Privatmeinungen*, i. e. they are mere private opinions.

Page 714 (832), instead of *ein jeder Theil*, it is proposed to read *kein Theil*. This would be necessary if we took *vermisst werden kann*, in the sense of *can be spared*, while if we take it in the sense of *can be missed*, i. e. can be felt to be absent, the reading of the First Edition *ein jeder Theil* must stand. See the Preface to the First Edition, p. xx, note 1.

On p. (138) 157, the First Edition reads, *Weil sie kein Drittes, nämlich reinen Gegenstand haben*. This gives no sense, because Kant never speaks of a

reinen Gegenstand. In the list of Corrigenda at the end of the Fifth Edition, *reinen* is changed into *keinen*, which Hartenstein has rightly adopted, while Rosenkranz retains *reinen*.

On pp. 16 and 17 of the Introduction to the Second Edition (Supplement VI. p. 407), Dr. Vaihinger has clearly proved, I think, that the whole passage from *Einige wenige Grundsätze* to *Können dargestellt werden* interrupts the drift of Kant's argument. It probably was a marginal-note, made by Kant himself, but inserted in the wrong place. It would do very well as a note to the sentence: *Eben so wenig ist irgend ein Grundsatz der reinen Geometrie analytisch.*

With these prefatory remarks I leave my translation in the hands of English readers. It contains the result of hard work and hard thought, and I trust it will do some good. I have called Kant's philosophy the *Lingua Franca* of modern philosophy, and so it is, and I hope will become so still more. But that *Lingua Franca*, though it may contain many familiar words from all languages of the world, has yet, like every other language, to be learnt. To expect that we can understand Kant's Critique by simply reading it, would be the same as to attempt to read a French novel by the light of English and Latin. A book which Schiller and Schopenhauer had to read again and again before they could master it, will not yield its secrets at the first time of asking. An Indian proverb says that it is not always the fault of the post, if a blind man cannot see it, nor is it always the

fault of the profound thinker, if his language is unintelligible to the busy crowd. I am no defender of dark sayings, and I still hold to an opinion for which I have often been blamed, that there is nothing in any science that cannot be stated clearly, if only we know it clearly. Still there are limits. No man has a right to complain that he cannot understand higher mathematics, if he declines to advance step by step from the lowest to the highest stage of that science. It is the same in philosophy. Philosophy represents a long toil in thought and word, and it is but natural that those who have toiled long in inward thought should use certain concepts, and bundles of concepts, with their algebraic exponents, in a way entirely bewildering to the outer world. Kant's obscurity is owing partly to his writing for himself rather than for others, and partly to his addressing himself, when defending a cause, to the judge, and not to the jury. He does not wish to persuade, he tries to convince. No doubt there are arguments in Kant's Critique which fail to convince, and which have provoked the cavils and strictures of his opponents. Kant would not have been the really great man he was, if he had escaped the merciless criticism of his smaller contemporaries. But herein too we perceive the greatness of Kant, that those hostile criticisms, even where they are well founded, touch only on less essential points, and leave the solidity of the whole structure of his philosophy unimpaired. No first perusal will teach us how much of Kant's Critique may safely be put aside as problematical, or, at all events, as not essential. But with every year, and

with every new perusal, some of these mists and clouds seem to vanish, and the central truth is seen rising before our eyes with constantly increasing warmth and splendour, like a cloudless sun in an Eastern sky.

And now, while I am looking at the last lines that I have written, it may be the last lines that I shall ever write on Kant, the same feeling comes over me which I expressed in the Preface to the last volume of my edition of the Rig-Veda and its ancient commentary. I feel as if an old friend, with whom I have had many communings during the sunny and during the dark days of life, was taken from me, and I should hear his voice no more.

The two friends, the Rig-Veda and Kant's Critique of Pure Reason, may seem very different, and yet my life would have been incomplete without the one as without the other.

The bridge of thoughts and sighs that spans the whole history of the Aryan world has its first arch in the Veda, its last in Kant's Critique. In the Veda we watch the first unfolding of the human mind as we can watch it nowhere else. Life seems simple, natural, childlike, full of hopes, undisturbed as yet by many doubts or fears. What is beneath, and above, and beyond this life is dimly perceived, and expressed in a thousand words and ways, all mere stammerings, all aiming to express what cannot be expressed, yet all full of a belief in the real presence of the Divine in Nature, of the Infinite in the Finite. Here is the childhood of our race unfolded before our eyes, at least so much of it as we shall

ever know on Aryan ground,—and there are lessons to be read in those hymns, ay, in every word that is used by those ancient poets, which will occupy and delight generations to come.

And while in the Veda we may study the childhood, we may study in Kant's Critique of Pure Reason the perfect manhood of the Aryan mind. It has passed through many phases, and every one of them had its purpose, and has left its mark. It is no longer dogmatical, it is no longer sceptical, least of all is it positive. It has arrived at and passed through its critical phase, and in Kant's Critique stands before us, conscious both of its weakness and of its strength, modest, yet brave. It knows what the old idols of its childhood and of its youth too were made of. It does not break them, it only tries to understand them, but it places above them the Ideals of Reason—no longer tangible—not even within reach of the understanding—yet real, if anything can be called real,—bright and heavenly stars to guide us even in the darkest night.

In the Veda we see how the Divine appears in the fire, and in the earthquake, and in the great and strong wind which rends the mountain. In Kant's Critique the Divine is heard in the still small voice—the Categorical Imperative—the I Ought—which Nature does not know and cannot teach. Everything in Nature is or is not, is necessary or contingent, true or false. But there is no room in Nature for the Ought, as little as there is in Logic, Mathematics, or Geometry. Let that suffice, and let future generations learn all the lessons contained

in that simple word, I ought, as interpreted by Kant.

I feel I have done but little for my two friends, far less than they have done for me. I myself have learnt from the Veda all that I cared to learn, but the right and full interpretation of all that the poets of the Vedic hymns have said or have meant to say, must be left to the future. What I could do in this short life of ours was to rescue from oblivion the most ancient heirloom of the Aryan family, to establish its text on a sound basis, and to render accessible its venerable Commentary, which, so long as Vedic studies last, may be criticised, but can never be ignored.

The same with Kant's Critique of Pure Reason. I do not venture to give the right and full explanation of all that Kant has said or has meant to say. I myself have learnt from him all that I cared to learn, and I now give to the world the text of his principal work, critically restored, and so translated that the translation itself may serve as an explanation, and in some places even as a commentary of the original. The materials are now accessible, and the English-speaking race, the race of the future, will have in Kant's Critique another Aryan heirloom, as precious as the Veda—a work that may be criticised, but can never be ignored.

F. MAX MÜLLER.

OXFORD,
November 25, 1881.

THE CRITIQUE OF PURE REASON

AS ILLUSTRATED

BY A SKETCH OF THE DEVELOPMENT OF OCCIDENTAL PHILOSOPHY

BY

LUDWIG NOIRÉ.

INTRODUCTION.

'THE history of philosophy has ceased,' says Lassalle[1], 'to count as a mere collection of curiosities, an assemblage of arbitrary or accidental opinions. Thought too is seen to be an historical product; and the history of philosophy a representation of the course of its self-development in necessary continuity. And if the history of philosophy, like all other historical development, is governed by inner necessary laws, then surely, here if anywhere, in this history of knowledge, the law of the development of knowledge must coincide with the law of knowledge itself.'

I have taken these words as the motto of the following historical introduction, although they are not free from the obscurity and confusion of thought which flourished under the rule of Hegelianism. For the 'History of Philosophy' and the 'History of Knowledge' are very far from being identical. If our conception of philosophy includes all those reflections which the human mind has at different times indulged in respecting its own nature, then the history of philosophy will be a history of these reflections, and will form only a portion, though an important one, of the 'History of Knowledge,' and this only so far as it satisfies the true test of value by exercising

[1] Die Philosophie Herakleitos des Dunkeln, i. p. xii.

a lasting influence upon the processes of human thought. It is however possible to regard the history of knowledge as the chief or sole object of philosophical research, and if such a view has not yet received the adherence of the majority, it has at least been formulated by one authority of weight, in these terms: '*All future philosophy must be a philosophy of language.*'

Notwithstanding this obvious confusion of terms, I have chosen the above words of Lassalle as a motto for the present work, first, because of the great truth which they do contain, and, secondly, because of their appropriateness at the present day, when, more than at any previous time, the conviction is gaining ground that in order to understand any fact or phenomenon, any manifestation of human opinion, feeling or belief, we must first familiarise ourselves with its origin and its past development. And I may hope that the two great camps in which the men of science and the philosophers—the empiricists and a-priorists—are drawn up will be reconciled and meet here as upon neutral ground. For the former, the motto promises a discussion of development, and of development according to natural, impartial reasoning: while to the latter it concedes the lofty, marvellous and incomprehensible faculty distinguishing mankind,—reason,—towards which no Darwinian has as yet succeeded in the least degree in establishing a bridge from out the animal world[1].

Kant's *Critik der Reinen Vernunft* represents the greatest revolution which has ever taken place in

[1] Instead of this, human reason has been imported into the animal world, and the problem, so far from being cleared up, has thus been rendered doubly obscure, as, for instance, by Sir J. Lubbock in his observations on ants.

the realms of speculation. It has often been compared, and among others by the author himself, with the Copernican system. Not less truly it has been likened by Rosenkranz to the head of Janus in the temple of philosophy, concentrating in itself all the conquests of preceding labours, while all further progress has to take its departure thence. To do full justice to its significance requires therefore a retrospective survey of all that has been done in this region from the first existence of philosophy.

Philosophy begins when men first begin to reflect with curiosity about themselves and the world around them; it begins therefore when primitive religion, which appears as the earliest and most natural interpretation of the universe, is no longer able to satisfy them with the imaginative language of mythology. They do not guess that it is their own reason which drives them to seek for new explanations; the double problem of world and mind still appears as a simple one, and they seek to attain the desired explanation from the world and in the world.

An organic presentation of the history of philosophy would therefore have to show how reason first takes the widest flights in search of its proper object, which go on narrowing in the course of centuries till at last they only embrace a narrow spot within which the self and its own nature appears to the astonished gaze as the true Archimedean point whence everything else is to be explained.

In the following pages I have endeavoured to trace in broad outline the course which has been pursued from the earliest beginnings to this goal. In order to carry out the programme laid down I have traced the organic structure of this development

to a single idea as simple as the nature of knowledge itself. It is to be hoped that this simplicity will not prove a stumbling-block. The grounds upon which it rests will not become apparent till we reach the beginning of the sketch of mediæval philosophy. For the present it is sufficient to observe in reference to the ideal of pure reason set up by Kant that the essence of the ancient philosophy was *cosmology*, that of the mediæval, *theology*, and that of the modern, *psychology*.

I say the essence, meaning only the great currents of thought, which had received a decisive direction towards a certain quarter, in each principal epoch of development, notwithstanding the apparently opposite bent of minor tributaries, of isolated thoughts and opinions whose true value and significance can only be estimated at a later date when a new theory of the universe has been accepted. However high the summit of a tree may reach, its root is in the soil beneath, and philosophers too are children of their age and can never wholly free themselves from the ideas, convictions, and prejudices which surround them: their thoughts are borne along with the torrent of the general thought.

Yet it is an interesting spectacle to watch the truths and theories of a future day germinating in earlier times as on a foreign soil. And of this we need only say that there is no tendency of modern thought which has not its prototype in Greek philosophy, none except that which must be called *the* modern tendency κατ' ἐξοχήν—the Ego of Descartes. At the same time it must be obvious to every thoughtful mind that it is just this latest development which has made all the ancient systems and forecasts to appear in a new light, so that even when

the original hue of the stream remains to testify to its origin, still in the new current with which it mingles, it struggles onwards under quite different conditions and in a fresh direction. The doctrines of Kant may be recognised, as we shall see, in the views of Herakleitos and Protagoras, but in a form which bears the same relation to his work as the guesses of the Pythagoreans about the earth's motion do to the calculations of Copernicus, Galileo, and Newton. Kant himself seems to have foreseen the chance of such insinuations, for he appeals to those who take the 'History of Philosophy' for philosophy itself, 'to wait till his investigations have become historical, after which it would be their turn to instruct the world as to what had happened before. Otherwise nothing could ever be said which had not, in their opinion, been said already, and indeed this saying itself may be a trustworthy prophecy of what is to be said hereafter. For, since the human understanding has occupied itself for many centuries with countless objects in various ways, it would be almost strange if something old could not be found to resemble every novelty[1].' Schopenhauer's answer to those who, after ignoring his work for a generation, professed to find it forestalled in a sentence of Schelling ('Wollen ist Ursein'), is to the purpose here: 'He only, who has discerned the reasons and thought out the consequences of a truth, who has developed its whole content and surveyed its whole scope, and who has then with full consciousness of its worth and weightiness given clear and coherent expression to it, he and he only is its author and originator[2].'

[1] Prolegomena, Preface.

[2] Parerga und Paralipomena, i. 144.

Kant then, who analysed the human reason into its ultimate elements and so first made it fully intelligible to itself, marks the close of a period of development, which now lies spread out as a whole before our eyes, and which we have to trace through its origin and its progress, its uncertain steps and tentative searchings, its confident struggles and its anxious doubts, its apparent retrogression and its gallant onward strides.

The palm of valour belongs to the hero of thought who has plunged into the obscurest abysses of the human mind and, with almost superhuman calm, has succeeded in emerging with the key to the mystery in his hand. In Kant, in the truest sense of the words, reason has *come to herself*. He has made an end for ever of all mystical admixtures, all unjustifiable pretensions, all Icarus-like flights towards forbidden regions. If, as no one has yet questioned, reason is the true and only tool and means to which man owes his high place, his successes and his inward nobility, Kant must be recognised with equal unreserve as the greatest benefactor of humanity. May the seed which he has scattered ripen everywhere; may the light of day which rose with him spread over every region of thought and conduct; and above all, may the broils, at once so empty and embittered, and the logomachies of the school which have already done so much to damage philosophy in the estimation of some of the good and wise, may these at length be silenced, and the name of Kant become a rallying-point of union for all genuine and honest lovers of truth in every science and among every nation. This is the only worthy return which our gratitude to this great thinker can bring to celebrate the jubilee of his immortal work.

Perikles said that 'the whole world is the tomb of the great,' and we may say of Kant, Time and Space cannot limit the action of great men. Of him, more than of any child of man, the poet's words are true—

'Es kann die Spur von meinen Erdentagen
Nicht in Æonen untergehn.'

ANCIENT PHILOSOPHY.

Ἐν ἀντὶ πάντων.—Ὄντως ὄν.

THE character of ancient philosophy is naively objective. Antiquity knew nothing of the important distinction, introduced by Descartes, between the thinking subject and the object of thought, which is now recognised as the necessary starting-point of all philosophical enquiry. *What* we think and have to think, was still the chief matter: the question *how* we think had not yet presented itself. Even the highest achievement of ancient philosophy, the Platonic Idealism, did not escape these fetters of objectivity; the rational soul was conceived to be capable of discerning ideas in their purity and clearness, but objective reality was attributed to the ideas.

Philosophical questions in antiquity were accordingly ontological; in other words, *Being* was everywhere presupposed and further investigation was directed only towards the nature of being, and how many kinds there were of being, whether one or many. While we have been in the habit, since Descartes, of starting from the knowing subject, and, since Kant, of deducing thence the conception of being, such an idea seldom presented itself to the ancients; they could only explain the nature of reason by assuming the mind to be a real entity,

and then enquire further whether it was a special kind of being, or whether it was identical with matter; whether it was a kind of sensibility, or whether it was a part of the general world-soul. The true path of idealism was still undiscovered. Reason, however, in obedience to its natural bent, was striving everywhere towards unity, little suspecting in its search after unity that the true source thereof lay in itself, and that all the while it was but projecting its own nature outwards into the world of Being.

It may be said then of the philosophy of the ancients that it consisted of attempts to explain the world by means of a single principle which was expected to furnish an explanation of reason and the human soul. This is the natural course of the development and progress of knowledge; the last thing that man discovers is his own Ego; the outer world is always the most certain and the most original in his eyes. In this sense Sokrates observes in the Phaedros: 'Do you then believe that one may understand the nature of the soul without discernment of nature as a whole?'

The childish beginnings of philosophy among the Greeks therefore all take the form of naturalism. The principles or causes of the universe were sought in water, air, the æther or fire. The material thrust itself in among what was formal and peculiar to the mind, and little blame can be imputed to the ancients for this; seeing how many there are at the present day who cannot emancipate themselves from this objective pressure, and persist in raising such questions as whether the soul is material, which is about as rational as to ask if a circle is quadrangular or if a mathematical triangle is green or blue.

The first attempt to place the One at the summit of a theory of the universe was made by the Eleatics. They were inspired by the dim consciousness that rational knowledge is impelled to strive after completeness, duration, and unchangeableness. The opposition or incompatibility between this desired unity and the manifold variety in the outer world called for some compromise of conciliation, and hence we find first in the Eleatic school the opposition between perception and thought, between the Phenomenon and the Noûmenon. The latter alone is the really existing, it is unchangeable, immoveable, ever resting; the world of sense, on the contrary, is vacillating, deceptive, ever in motion. The appearances of sensibility, or phenomena, must therefore be reconciled or corrected by the really Existing which can only be conceived in thought. But the confusion between the real and the ideal is very strikingly apparent here when we find the greatest master of this school, the universally revered Parmenides, asserting that 'Being and Thought are one and the same.' What may pass for lofty wisdom in those early days of the laborious struggles of the reason towards self-knowledge, must be condemned as dull absurdity when it appears after Kant and Descartes in the Hegelian Dialectic.

The direct opposite to the Eleatic school is found in Herakleitos; in the former we welcome the first glimpses of the idea of substance, of the principle of the indestructibility of force, as well as of the subsequent investigations of Geulinx and Locke respecting the difference between real or primary and sensibly perceptible qualities, or between the intuitions of sense and reason; we see too the first consciousness of the antinomies which led to the immortal

achievements of Kant[1]. Herakleitos too was seeking for a secure and durable principle that should be applicable everywhere and always, and only need to be expressed to furnish the key to the nature of the world. He finds this durable and eternal principle, not like the Eleatics in rest, but, on the contrary, in strife, incessant flux and change. The true Being is an eternal Becoming, a state between being and not being. His famous saying of the universal flux of things rests upon the self-evident aptness of the description of a stream to which he appeals, showing it to be impossible to step twice into the same stream, seeing that the water composing it is always different.

The latest conclusion which was to be deduced from this fruitful idea is that the nature of substance must remain eternally unknowable by us, as it will always be impossible to distinguish whether the phenomenon before us proceeds from the identical same atoms as before or whether others have taken their place. Our reason is in any case compelled to picture matter as the persistent element, but this same matter remains for ever incomprehensible to us. For the rest, the positive side of this profound thinker's suggestion is from many points of view

[1] Zeno, the Eleatic, whom Aristotle called the father of dialectic, was the first to prove that multiplicity and motion were impossible; the former because the many must be a particular number over and above which there might be always one more, the latter because of the well-known property of time and space by which they admit of infinite division. The arrow in its flight is always in *one* infinitely minute portion of space,—it is therefore always at rest. A definite time cannot elapse, a definite space be traversed, because first the half, and then the half of the half, and so on *ad infinitum*, has to elapse or be passed through, which gives an endless series of subdivisions.

still clear and intelligible. The change of matter which goes on in organic structures, the circulation of life, the principle of substitution[1], these all point towards that original idea as to their germ. There can be no doubt that Herakleitos himself fully comprehended the significance of his own thought, as the key to the knowledge of the world and life. This appears especially from the fact that he saw in motion, in restless activity and change, the real principle of *life*. This is clear from a passage that runs, 'Herakleitos banished rest and stability from the world; for these are the qualities of corpses[2].'

In reference to rational knowledge or perception, it is in the highest degree interesting to find that Herakleitos had a presentiment of its being constituted by means of two factors. At least, it is reported by Sextus Empiricus[3], that according to Herakleitos, the soul attains to rational thought by receiving into itself the divine Logos which presides over the outer world; that in sleep this connection with the outer world ceases, and when so separated the soul loses the power of recollection. On waking

[1] An important application of this principle, with obvious reference to Herakleitos, occurs in Aristotle (Polit. iii. c. 3), who says, that we call a city the same as long as one and the same race inhabits it, although there are always some dying and others being born, as we are accustomed to call rivers and springs the same, although in the one case water is always pouring in and in the other flowing away. And the remark is transferred by Seneca to the human organism (Ep. lviii): 'No one is the same as an old man that he was as a youth, no one is to-day what he was yesterday. Our bodies change as streams do, and everything flows away as time does; nothing endures. This was the opinion of Herakleitos,—the name of the stream remains, the water runs away. This is clearer in all other things than in the case of man, but we too are borne along in equally rapid course."

[2] Plut. Plac. Phil. i. 23.

[3] Adv. Math. vii. 129.

however, looking forth through the portals of sense as through window openings, and reuniting itself again with the outer world, the soul recovers the faculty of thinking. Our nature is in fact estranged from the universe, and only as we approach it again through the paths of sense does our nature become anew assimilated to the All, as coals approached to the fire become fiery themselves. All truth, according to Herakleitos, resides in this universal and divine Logos, by which we become thinkers (λογικοί) ourselves. This is indeed still all very obscure and mysterious, but we see through the dark abysses points where future truth is crystallising already. We hail especially the intermediate relationship of sensibility between the soul, still in a state of rest, and the outer world by which it is to be enkindled. The window apertures by which the soul shines forth remind us of the phrase of Leibniz—the monads have no windows through which the outer world can see in. We also see clear indications of a perception that the criterion of truth must be objective, and it agrees with this that Herakleitos is said to have called our ears and eyes liars, since the mere sensible appearance of things always deceives us. It is true the Logos lies in the world without (in the περιέχον), and our own being is too far estranged from the world to furnish in itself the central starting-point of all knowledge.

Another truth that in our days is forcing its way into daylight is foreshadowed in the thought expressed by Herakleitos—in full harmony with his fundamental principle—that all things proceed from fire, and will be turned back into fire at last. It may be assumed as certain that the philosopher arrived at this truth by reflecting upon organic life

and the degree to which it is determined by light and heat, even though it may not be necessary to exclude all trace of oriental doctrine and influence. But we recognise pure Herakleitean profundity in the view that the whole of life *is* a similar process of opposing movements which are constantly being transformed into their own opposites like a flame or river. One of the Christian fathers, Gregory of Nyssa[1], gives an interpretation conceived in the same spirit: 'With regard to the body, the case is thus: as long as life remains in it, there is an unceasing up and down flow of change; rest only begins when life has left it. But as long as it is alive, there is no repose, only alternate growth and decay, or rather an incessant intermixture of the two.' After all its progress, contemporary physiology can hardly give a better definition of life than this one couched in Herakleitean phraseology.

Now if we assume that Herakleitos only saw in fire the freest and most rapid form of motion, and inferred thence that combustion must represent the primitive condition of all things, so that they were always passing through a course of change, now solid and at rest, then again dissolved into their constituent elements, we shall certainly have to recognise in the views of this powerful thinker, whose profundity met with unanimous recognition among the ancients, the first expression of the fundamental ideas which underlie the modern theory of the universe, namely,

(1) That the primitive condition of the world is a state of motion, not of rest.

(2) That the material substratum of all phenomena is an infinitely subtle substance, out of which

[1] De Anim. et Resurrect. p. 138, ed. Krab.

all others are constituted in forms which pass back again into simplicity.

(3) That the real objective Being is nothing but motion, whatever phenomenal differences may be thrust upon our notice by the senses.

The latter view, which is at the same time the foundation of contemporary science and the essence of Robert Mayer's theories, is warranted by many passages from ancient writers, including Aristotle and Plato, to be genuinely Herakleitean. Thus in the Theætetos we read[1], 'That everything is motion, and nothing else exists;' and again, 'According to Homer and Herakleitos all things move like streams.' In Aristotle it is said, 'That he (Herakleitos) believed everything existing to be in motion, and the majority are of the same opinion[2].'

Again: 'Some say that of existing things there is not one in motion and another at rest, and we are always merely deceived by our senses when we fail to perceive this[3].'

The influence of this powerful thinker was the more considerable because all subsequent systems had either to attach themselves to his doctrine or to deal with it in the way of development or correction, in some cases retaining and exaggerating what was one-sided and so reaching the most curious consequences, and in others endeavouring to reduce this element to its due proportion.

Supposing the general estimate of the Herakleitean flux to be correct, in the form in which it has always been reproduced by later writers,—namely, that nothing really *is*, but rather is always beginning to be or to cease to be, an eternal becoming, a middle

[1] 156 a. [2] De Anim. i. 2.
[3] Phys. Auscult. viii. c. 3.

state between being and not being[1],—then reason would be in some danger of yielding to the temptation of playing with its own paradoxes, and the dialectic trifling and *tours de force* of the sophists, who can prove of anything at the same time that it is and that it is not, might seem nearly related to the Herakleitean doctrine. Epicharmos of Kos was credited with the well-known subtleties about the Delian galley which had been the same since the days of Theseus though every fragment of its wood had been renewed; that the debtor was not bound to pay anything to his creditor because both were no longer the same as when the debt was incurred, or that an invited guest is not invited, for the same reason, and the like. The exaggerations of Kratylos belong to the same class; he believed himself to surpass his master, whose dictum as to the impossibility of bathing twice in the same river was improved upon, so that he contended it was impossible to bathe in it even *once*, since by the time the rest of the body had followed the feet, the water would have run away; he maintained, finally, according to Aristotle[2], that it is impossible to name anything, or to maintain anything; the utmost possible is to point to a thing with the finger, for everything is in a constant state of change. It is true that Aristotle gives this as the most extreme opinion of the *φασκόντων ἡρακλειτίζειν*, or 'the professed Herakleitizers.'

However this may be, the extreme insistence upon change or motion as the sole principle of creation led necessarily to this kind of exaggeration, and hence

[1] Plato, Theatet. 152 E: *Ἐκ δὲ δὴ φορᾶς τε καὶ κινήσεως καὶ κράσεως πρὸς ἄλληλα γίγνεται πάντα ἃ δὴ φαμεν εἶναι οὐκ ὀρθῶς προσαγορεύοντες· ἔστι μὲν γὰρ οὐδέποτ' οὐδέν, ἀεὶ δὲ γίγνεται. καὶ περὶ τούτου πάντες ἐξῆς οἱ σοφοὶ πλὴν Παρμενίδου ξυμφέρεσθον, Πρωταγόρας τε καὶ Ἡράκλειτος.*

[2] Metaph. iii. c. 5.

to the spontaneous breaking up of the Herakleitean system by the absurdity of the consequences deduced from it. Besides this, there was a concealed contradiction in the doctrine itself which made a direct correction necessary by means of the nature of human reason, though it is possible that in his own mind Herakleitos had silently effected that correction. All change and transition, all alteration constantly and continuously beginning, necessarily presupposes a something, some being that changes, transforms and modifies itself, otherwise all these predicates would be meaningless and unreal. But if we may trust Aristotle, Herakleitos had always maintained the existence of this One, underlying all change, although this assurance is rather weakened, in the passage[1] referred to, by the words 'he seems to wish to say.'

If, as many ancient writers bear witness, Herakleitos regarded fire as the primæval being[2] under-

[1] De Caelo, iii. 1: Οἱ δὲ τὰ μὲν ἄλλα πάντα γίνεσθαί τέ φασι καὶ ῥεῖν, εἶναι δὲ παγίως οὐδέν, ἓν δέ τι μόνον ὑπομένειν, ἐξ οὗ ταῦτα πάντα μετασχηματίζεσθαι πέφυκεν· ὅπερ ἐοίκασι βούλεσθαι λέγειν ἄλλοι τε πολλοὶ καὶ Ἡράκλειτος ὁ Ἐφέσιος.

[2] The passage in Plutarch (De EI apud Delph. p. 388) is very important in reference to this view: Πυρός τ' ἀνταμείβεσθαι πάντα καὶ πῦρ ἁπάντων, ὥσπερ χρυσοῦ χρήματα καὶ χρημάτων χρυσός. 'Everything is transformed into fire and fire transforms itself into everything, just as gold is exchanged for goods and goods for gold.' 'It is certainly difficult, especially considering the fragmentary form of those of his sayings which have been preserved, always to know exactly what was the real opinion, the actual thought in the mind of this great ancient; yet such a depth of insight is revealed by this comparison between the nature of the world and the national economy of the commercial world that I do not hesitate to rank this notion among the most important *aperçus* transmitted us from the philosophy of antiquity. It is the more remarkable seeing that it has not been taken up or developed by any subsequent philosopher,

lying all appearances, which produces by its transformations (*τροπαί*) and its conversions into the opposite (*ἐναντιοτροπαί*) all things and their differences, including life and thought, so that the life of one thing is the death of another[1], we should then have to honour in him the first prophet of the monistic theory of the universe, and the ideal which modern science, with its fundamental belief in the unity and indestructibility of natural forces, necessarily sets before itself. The defects and incompleteness of his doctrine lie on the same side as the incompleteness and defects of contemporary monistic naturalism, namely in what I may call, with Schopenhauer, the *antinomy of matter*. It is absolutely incomprehensible to the human reason how and whereby, if a single primitive being or substance makes up the content of the whole world, the changes or transformations of this substance could either first originate or continue to take place. Whence could the checks upon the universal uniform motion be imposed, whence came the Herakleitean condensation of fire into air, of air into water, of water into solid bodies? Or, to use more modern language, whence the number and specialisation of natural forces, of light, of heat, of electricity, whence the varying properties of chemical elements and the like? What more is accomplished with the *τροπαί* and *ἐναντιοτροπαί*, the

notwithstanding that it forms, as I shall show in another place, the best bridge to or preparation for the Kantian truths, and furnishes, according to the analogy indicated, the easiest means towards a comprehension of the Kantian doctrine.

[1] 'Fire lives by the death of earth and air lives by the death of fire, water lives by the death of air, and earth by the death of water.' Max. Tyr., diss. xxv. p. 230. Similarly Plutarch. De EI ap. Delph. 392 C: *Πυρὸς θάνατος ἀέρι γένεσις καὶ ἀέρος θάνατος ὕδατι γένεσις.*

modifications and conversions of things into their opposites, than the multiplication of phrases which explain nothing? We have no answer to this question; the utmost justification we can offer for Herakleitos and the modern naturalists is to say, They cannot explain the world, they cannot penetrate to its first causes, they can only record the fact that it *is* thus and thus only. They describe the constitution of the world as it reveals itself after attentive observation and diligent attempts at rational explanation, going beyond the obvious aspect of the phenomena of sense. And if it is asked, after this, for what reason there is assumed to be only *one* primary substance, the answer must be, because of the nature of human reason, which obeys an irresistible natural impulse in its strivings after unity. More than twenty centuries of fruitless search was needed before this answer could be found and those contradictions reconciled, before the only true and possible method—verification or criticism of the reason itself—was to be discovered by an eminent genius and pointed out to all posterity as the entrance porch to all philosophical research. If now, by the light of Kantian truth, we are enabled to discern the grandeur and depth of the Herakleitean doctrine, we shall find that in the latter the two poles of all knowledge, the *a priori* and the empirical, unite to form a kind of image of the universe, in which there appears, on the one hand, as the portion of reason, the permanent, eternal, fundamental essence of all things, and on the other, eternal change and motion, the restlessness of the becoming, as the result recorded by experience. It is true this was rather an intuition than a clear perception, for, as might be expected, we do not find

in Herakleitos much insight into these opposites and the roots from whence they spring.

His successors sought in various ways to obviate the one-sidedness which the doctrine was but vaguely felt, not yet clearly known to exhibit.

Among these Empedokles should be noticed first, as a thinker of decision and distinction. He put in the place of one fundamental substance, four elements by the admixture and dispersion of which all things in the world were to be constituted. These four elements correspond to what we should call at the present day rather conditions or aggregate states, adding to our present classification of solid, fluid, and gaseous bodies a fourth class, to include what were formerly called imponderables. It may be said of this view, by which all later generations were dominated, that the world was made more intelligible by it, but the explanation itself was in the highest degree unphilosophical. The correction of Herakleitos is only apparent. The conclusions were taken for granted in the premisses, and the very point calling for explanation was assumed at starting as self-evident. Predicates of a general nature, characterising the sensible qualities perceived in all things and the transitions which are also apparent, were assumed to be original things, the fundamental essence of the whole world, which consists of these elements; the different varieties of things were explained by the different intermixture of the elements. This is somewhat as if the chemists of the present day were to say their sixty-four elements had existed from eternity, or even, as an apostle of the most modern wisdom has delivered himself, 'In the beginning there was carbon.' A schoolboy familiar with the most elementary physical truths would laugh nowa-

days if the doctrine of the four elements, which for so long succeeded up to a certain point in satisfying the demands of human reason[1], were to be seriously propounded, and would exclaim, These are not separate things, but only different phenomenal forms taken by the same thing! How many centuries will still have to elapse before the Kantian doctrine becomes common property in the same way, and such utterances as the above come to be recognised as palpable absurdities only fitted to excite laughter[2]? This doctrine of Empedokles may have had a certain scientific value for his own age, as it certainly received—on account of its simplicity and its agreement with obvious recurring facts—widespread and long-enduring recognition: but we should not on that account attribute to it any higher philosophic value or regard it as a real progress of philosophic thought.

[1] Scarcely anything, material or spiritual, but what has been deduced from and explained by them. The doctrine of the four temperaments, in which the moist, the dry, the cold, or the hot was dominant, has been made to explain innumerable physiological and psychological problems, from the days of Aristotle down to modern times. And how instructive is it to find that scholastic philosophy was impelled to assume the presence, in single things, of a *quinta essentia* over and above the others, with which the ingenuity of the *abstracteurs de quintessence* might have free scope!

[2] It must be said, to the honour of England, that her men of science have preserved more of their mental independence, and shown more genuine philosophic instinct even in the realms of physics and chemistry, than those of any other country. It is only necessary to name the chemical theories of Graham, and the latest contributions of Crookes and Norman Lockyer. It should also be remembered that Schopenhauer and Robert Mayer, so long ignored or ridiculed in their own country, first received due recognition of their worth in England—the latter especially from Professor Tyndall. Whatever the reasons of this may have been, it is right to note the fact, and thus to fulfil a duty which the true patriot should delight in fulfilling.

Much greater significance must be assigned to the other chief doctrine of the same thinker, namely, that all phenomena are determined by love and hate, that by these two principles all things are formed and effected, and that by them the boundaries of the whole phenomenal world are established and maintained. This at all events was a profound *aperçu*, a transfer of the directly conscious but obscure desires and impulses of man to the rest of the world; and the Greek is so far a precursor of Schopenhauer, and receives his due meed of praise from the latter as *ein ganzer Mann*[1]. Empedokles does indeed deserve credit for this first discernment and description of the inner side of things, in contradistinction to the generally prevailing naturalism. It is true that Anaxagoras had already done something of the same kind, when he associated with the active forces presiding in nature and seething chaotically together, a νοῦς which continuously ordered all things by selection, so that separate existences constituted themselves from out of the universal confusion. This was naturally most agreeable to the Sokratic school, which dwelt above all others on the spiritual side of things, and Aristotle says in praise of Anaxagoras: 'When he maintained for the first time that an intelligence presided over nature and was the cause of the order of things, he seemed like a man who stood alone in possession of his senses in the midst of all the rest and their idle chatter[2].' Neither Sokrates nor Aristotle, it is true, were edified with the way in which Anaxagoras made use of his νοῦς or intelligent principle. The latter observes: 'He uses it only like a machine; when he

[1] Parerga und Paralipomena, i. p. 38.

[2] Metaph. i. 3. p. 984.

doubts what is the cause of anything, he introduces this, but otherwise any natural cause is preferred to his νοῦς[1].' That *consciousness* plays a considerable part in all natural change or growth is an unquestionable truth involved in this idea, but fatal errors were introduced by assimilating this manifestation of it to the human intellect and to its modes of operation, which even Plato and Aristotle themselves were not altogether able to avoid. Schopenhauer is right in pointing out[2] how much more important it was to recognise, with Empedokles, the obscure, unintelligent impulses, i.e. the will, as an inward agent, than knowledge or perception, which is given at a much later stage, and falls to the share of comparatively few beings.

The two above-named thinkers sought obviously to extend the sphere of philosophical speculation, while they strove tentatively to assign to intelligence its share in the natural order. It was reserved to the Sokratic school to develope this aspect of the truth. The other side was developed with rigorous logic and unusual mental vigour into a complete materialistic-mechanical system, which, at least in its main features, still obtains among the students of nature,—the atomic theory of Demokritos.

Herakleitos had called the human eye and ear liars, because they represent before us continuous being, whereas there is really only change and motion, an eternal flux; and with regard to that untrustworthiness of our sense-perceptions, Demokritos fully concurred with him, saying our senses deceive us as they suggest to us the presence of different qualities in things. In truth nothing exists except atoms moving in vacancy. Sweetness

[1] Metaph. i. 3. p. 985.

[2] Parerg. i. p. 38.

and hardness, heat, colour and the like, are only sensible appearances,—in reality all this is merely a variously ordered assemblage of atoms[1], the movements of which are rendered possible by the void spaces interspersed between them.

We must admire the theory which struck out at once in firm and decided outline a purely dynamic natural theory of the world and the powerful minds of the one who first conceived and the two—Epikuros and Lucretius—who continued and carried out the same. Here for the first time the demands of the reason are satisfied with a more or less; quantitative differences take the place of the varied, uncertain, inexplicable appearances of sense, of the strange, myriad-formed, hurriedly flitting masquerade of phenomena. All subsequent materialistic, that is to say naturalistic, explanation has always thus reverted to the atomic theory, although the nature and the *modus operandi* of the atoms may appear in a very different light, as conceptions of this kind have become clearer. But the ideal of the man of science, the student of nature, is, and remains, to reduce all the multiplicity of phenomena to the motion of the minutest parts.

Before dealing with the importance of the Demokritean doctrine, and its place in the great process of the evolutionary struggles of reason towards self-knowledge, I will just point to the opposition between it and the view of Herakleitos. The two men

[1] Νόμῳ γλυκὺ καὶ νόμῳ πικρόν, νόμῳ θερμόν, νόμῳ ψυχρόν, νόμῳ χροιή· ἐτεῇ δὲ ἄτομα καὶ κενόν. ὅπερ νομίζεται μὲν εἶναι καὶ δοξάζεται τὰ αἰσθητά, οὐκ ἔστι δὲ κατὰ ἀλήθειαν ταῦτα, ἀλλὰ τὰ ἄτομα μόνον καὶ τὸ κενόν. Sext. Empir. adv. Math. vii. 135. These words contain the programme of the future views and conclusions of Locke, Leibniz, and Robert Mayer. The metaphysical truth underlying them, however, forms the substance of the immortal work of Kant.

were often named together in antiquity and that in opposition to each other, and there may be a deeper reason for this, which the foolish anecdotes about the laughing and the weeping philosopher only serve to disguise. The root of this antagonism must naturally be sought in the fundamental principle of each, and this is not hard to find with the philosophers of antiquity, all of whom directed their investigations towards the nature of being, and considered as their principal business to discover being under the veil of appearance, or to distinguish between phenomena and noûmena, or, in other words, to discover by the aid of reason the veritable being (τὸ ὄντως ὄν). We have therefore to enquire what, according to each of these philosophers, was mere appearance, born of the senses, and what was real being? The answer would run very differently: Herakleitos would say, Change, transition, eternal motion is the true reality; Demokritos, on the other hand, that which continues through all transitions, that whereby and wherein this eternal change and eternal motion is effected, that is to say, the atoms.

The progress is unmistakeable, it is the same step that in modern philosophy was taken by Leibniz in advance of Spinoza.

For, as already observed, the substance of Herakleitos accomplishes all its transformations without any place being allotted to the Why? not the questioning after a *causa prima* such as is for ever inaccessible to human reason,—for this is just what the Herakleitean substance with its eternal flux presents us with,—but rather the wherefore of separate phenomena, the ground of their existence, and of the connection subsisting between them. It

will appear later on, after the Kantian doctrine has made its revelations, how much of metaphysical truth nevertheless underlies the doctrine of Herakleitos, and how much more depth there is beneath his obscurity than behind the broad daylight of materialism.

Both philosophers seem to take their start from the same truth, to which they give however very different expression, clearly indicating their respective standpoints by that difference. 'The world,' says Herakleitos, 'the one which embraces all things, was not created by any God or man, but it was and is and will be for ever a living fire which is kindled and extinguished in alternate measure[1].' The saying on which Demokritos bases his doctrine is, on the other hand: 'Nothing can proceed out of nothing and nothing can be annihilated.' The negative structure of the sentence is of the greatest importance, for it is the narrow bridge which leads from the world of appearance or experience into the world of *a priori* or metaphysical truth. This *a priori* truth is indeed contained in the Herakleitean principle, but it had not made terms, once for all, with experience; and everything conceivable was supposed to be produced by change, without any firm foothold being given to reason, whence it could proceed to conquer wider realms. The sentence of Demokritos, on the contrary, promotes each single phenomenon, even the most ephemeral, to metaphysical honours; it does not proceed from and cannot pass away into nothing. 'This saying,' observes Lange[2], 'which in principle

[1] Clem. Alex. Strom. V, c. 14, p. 711 Pott.: *Κόσμον τὸν αὐτὸν ἁπάντων οὔτε τις θεῶν, οὔτε ἀνθρώπων ἐποίησεν. ἀλλ' ἦν καὶ ἔστιν πῦρ ἀείζωον, ἁπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα.*

[2] Geschichte des Materialismus, i. 12.

contains the two chief doctrines of modern physics—the principle of the indestructibility of matter and the conservation of force, reappears in substance in Kant, as the first analogy of experience: Through all phenomenal changes substance persists, and the *quantum* of it in nature neither increases nor diminishes.' Kant holds that at all times the persistence of substance has been assumed, not merely by philosophers, but by common opinion. The latter is doubted by Lange, who thinks that, under the guidance of the imagination, men have often pictured to themselves a beginning out of nothing. And this perhaps is true; but wherever men have thought rationally, and collected and communicated the results of their experience, the proposition has passed as an axiom, though perhaps an unconscious one, that has not yet found verbal expression. An experiment might be made without this proposition having been admitted, but it could not be utilised and brought into connection with other data of experience. *Ex mere particularibus nihil sequitur;* there can be no science of particulars. Experimental science therefore is without philosophical foundation until the universal truths bearing on it have been discovered and formulated. And it is significant that all the chief thinkers of late times, who have endeavoured to deepen the foundations of empiricism and to indicate its proper position in relation to philosophical thought, have always reverted to Demokritos and the foundations firmly laid down by him. It was Bacon who, after a long period of neglect, once more drew attention to the name of Demokritos, and awarded him the palm for genuine scientific inquiry, in contradiction to the current deification of Aristotle. It is interesting also to learn

that Robert Mayer, at the time when he was meditating on his great and fruitful principle, used in conversation, according to Rümelin, to repeat again and again: *Ex nihilo nihil fit. Nihil fit ad nihilum.*

We might therefore, it seems, call Herakleitos the father of the *a priori* philosophy and Demokritos of empiricism. But as the two principles are after all indissolubly connected, notwithstanding the opposite standpoints of the two thinkers, they necessarily meet sometimes upon common ground. According to Herakleitos 'all things change;' according to Demokritos 'all things remain;' and yet both mean the same thing. Demokritos started from particular phenomena and brought these into relation with the universe as a whole by means of the negative version of the proposition. Herakleitos, on the other hand, began with the general principle, and to bring this into harmony with the world of experience it was necessary to find a speculative ground for the negative principle of change. All the while the mutable 'all things' of Herakleitos is objectively identical with the permanent 'all things' of Demokritos. Only the starting-points are different.

Demokritos cut a way through the rock for the spreading stream of empirical science, which, fed by a thousand tributaries, was to pursue its course through ages towards the great ocean of human knowledge, which is called upon to give an ever more and more faithful picture of the universe and its inner principles of coherence. Two things were absolutely necessary for this result: (1) the sensible, discrete, particular had to be taken for the starting-point, and this alone could be defined and fixed by means of *number*, or the mathematical conception,

which raises them into the firm position of the exact sciences; (2) the causal connection of phenomena had to be recognised as invariable and unbroken: 'Nothing happens without a cause, but everything with a cause and by necessity.'

The atomic theory proceeded from the first requirement, and though modern science forms a very different conception of the atoms from that of Demokritos, still all exact study of nature points to something of this kind. The second proposition proclaims the principle of natural causality, the invariable law that every effect must be preceded by a cause, as the true key to the knowledge of nature.

But the defects and weakness of the atomic theory in its original form must not be overlooked. Demokritos explained the motion of the atoms by their *falling* through space; he maintained that the atoms were of infinitely varied form, and that all changes in the natural order of things were produced because the larger atoms fell more rapidly than the smaller ones. This detracts nothing from the magnitude of his main idea, that all the qualities which are brought before us by sensible perception may be reduced to quantitative differences in the atoms, which are only distinguishable by their extension and weight, and which act only by way of impact and pressure. Descartes, Leibniz, and Locke will return to this principle hereafter, and Kant will submit it to a searching criticism and trace its justification home, namely in the nature of the pure reason.

In all this there is an implicit assumption that mathematics, the theory of the pure relations of space and number, offers the sole and exclusive method available for the explanation of the phenomenal world. Yet ancient materialism did not rise to a

distinct recognition and formularisation of this truth; still less had it attained to the application of mathematics to the interpretation of experimental science. Mathematics were still too immature, and the circle of experimental knowledge too restricted. We must wait for the enunciation of this truth till the days of Descartes, who, living among the triumphs of the empirical method, was himself a great mathematician. But the importance of mathematics, their exceptional place among the remaining sciences, and its relation to them all, these points at least did not escape the theoretical consideration of antiquity.

It will be sufficient here to refer to the Pythagoreans, who may not have been without influence on the views of Demokritos, a school which had already discerned the important truth that *number* played the final and decisive part in all things, and that the true ultimate nature of things could only be expressed in terms of number. I do not know that, even at the present day, we are in a position to utter anything more profound or more true than the saying attributed to Pythagoras: 'The wisest of all things is Number, and next to this the Name-giver.' Just where the chemist fails to proceed any farther in numerical description, i. e. at the boundary-lines of his exact knowledge, he necessarily begins the use of words to describe the problem, and meanwhile regards the chemical elements thus indicated as so many closed doors, through which he knows however that the right way to the ultimate sources of the truth must lead. To him, as to the physicist, to the mineralogist, and even to the biologist, a mental ideal hovers before the mind, according to which all differences are to be reduced at last into pure relations of number, so that the whole universe, at least on its

outer side, presents itself as a mathematico-mechanical problem. We know too little of Pythagoras and the sources on which he drew for his inspiration. But however much he may have owed to Egypt, we cannot too much admire the profound originality of the man who forestalled the ripest conclusions of modern science, and was penetrated by the conviction that there was the same principle underlying the harmonies of music and the motion of the heavenly bodies, and that the essential element in all things was ever their numerical relation. It is true that, neither in ancient nor modern philosophy, was any one, before Kant, able to explain the nature and origin of number and the possibility of its genesis. But even among the ancients there was some doubt and hesitation as to the relation of number to actual things and the real opinion of Pythagoras. Thus we are told: 'Not *by* number, but *according* to number, Pythagoras maintained all things to have been originated[1].' And Aristotle says: 'The Pythagoreans maintain that things exist only by a kind of imitation of the relations of number[2].' In other places he says, on the contrary, that the Pythagoreans considered number to be the real being, the base of all creation[3]. It is certain that all Pythagorean thought was dominated by the fundamental view, that the truth was only to be found in number, and it is also certain that by the application of this principle to physical problems, the Pythagoreans were enabled to reach important discoveries, which

[1] Stob. Ecl. i. p. 302: *Πυθαγόρας οὐκ ἐξ ἀριθμοῦ, κατὰ δὲ ἀριθμὸν ἔλεγε πάντα γίγνεσθαι.*

[2] Metaph. i. 6: *Μιμήσει τὰ ὄντα φασὶν εἶναι τῶν ἀριθμῶν.*

[3] Ibid. i. 5: *Ἀρχὴν εἶναι καὶ ὡς ὕλην τοῖς οὖσι. Ἀριθμὸν εἶναι τὴν οὐσίαν ἁπάντων.*

slumbered through oblivion and neglect for ages, until again brought to light and confirmed by the same method, matured and perfected in later generations. It is well known that the Pythagoreans had anticipated the Copernican system. Copernicus himself refers to Nicetas[1] and Philolaos[2]. This correct insight was withheld from mankind for some fifteen centuries through the authority of Aristotle. For the rest, the high estimation in which mathematics were held by the Socratic school appears from the famous dictum of Plato, Μηδεὶς ἀγεωμετρήτος εἰσίτω, as well as from many other passages, among which the following is especially instructive, as it complains of the neglect of this science among the Hellenes and praises its cultivation among the Egyptians (Laws, vii. 819): 'All freemen, I conceive, should learn as much of these various disciplines as every child in Egypt is taught when he learns his alphabet. In that country, systems of calculation have been actually invented for the use of children, which they learn as a pleasure and amusement... I have late in life heard with amazement of our ignorance in these matters; to me we appear to be more like pigs than men, and I was ashamed, not only on my own behalf, but on that of all Hellenes[3].'

It might have been supposed that the number-philosophy of the Pythagoreans would have entered into alliance with the atomic theory of Demokritos, and that the empirical sciences, on exact or mathematical principles, would have begun at once to flourish among the Greeks. This however was not the case, and Lange throws the responsibility on the

[1] As quoted by Cicero, Quaest. Acad. ii. 39.

[2] Plutarch, De Placitis Philos. iii. 13.

[3] Jowett's Translation.

Socratic school. 'Undoubtedly remarkable results would have been reached in this way by classical antiquity, had it not been for the reaction which proceeded from Athens against the tendency of philosophy towards natural science, and which so decidedly obtained the upper hand[1].'

This may be true, notwithstanding that the reaction itself was a stage of the utmost importance in the development of philosophical thought and a great boon to mankind.

The more or less avowed hostility against Aristotle and his method entertained by the philosophical representatives of empiricism, from Bacon down to our own times, may have for one of its chief reasons that they saw how, in more than one way, he set aside or falsified the strict principle of natural necessity, the one firm foundation of all empirical knowledge. The introduction of an immaterial element, teleology, or the doctrine of final causes, which took up so large a place in the sciences of organic life founded by him, and more especially the dialectical trifling and reasoning from ready-made formal propositions, the importation of logical mental processes into the sober observation of sensible perceptions in the phenomenal world—all this was in direct contradiction to the strictness of scientific method. The salient point of the standing controversy is indicated in the following passage of a distinguished anti-Aristotelian, who was able, nevertheless, to admire the intellectual greatness of his adversary[2]:—

'In the old world the greatest and most meritorious student of nature would resort to utterances like

[1] Lange, Geschichte des Materialismus, i. 15.

[2] Robert Mayer, Die Mechanik der Wärme, p. 247.

this to explain, e. g. the properties of the lever: the circle is such a marvellous thing that it is easily conceivable how the motions which produce a circle should also present the most remarkable phenomena. If Aristotle, instead of applying his extraordinary talents to meditations upon the stationary point and the revolving line, as he called the circle, had investigated the numerical proportion between the length of the lever and the pressure exercised, he would have become the founder of an important branch of human knowledge.... The rule which should have been followed in order to lay the foundations of natural knowledge in the shortest conceivable space of time may be briefly stated. The most obvious and frequent of natural phenomena should have been subjected, by the help of the senses, to a careful investigation, which should have been continued until the chief conditions, which may be expressed in numbers, had been elicited.' 'These numbers are the sought-for foundation of an exact study of nature.'

The influence of Sokrates is generally represented as an energetic reaction against the doctrine and practice of the Sophists. The Greek Sophists bear a striking family likeness to the French revolutionary thinkers of the last century. The vital characteristic of both is a kind of intoxicated self-exaltation of intelligent reason, possessed with an overweening sense of its own superiority as it casts off the bandages of the old religious conceptions. It is as true of the age of the Greek Sophists as of that of the French Encyclopædists, that the morals, which had grown up together with the religious dogmas, were impaired with them, that individualism, sensualism, and a superficial rationalism put an end to

all sincere devotion in the search for truth and in the investigation of the moral principles of life, until at last an all-destroying scepticism, a dialectic and rhetoric to which everything was mere sport, threatened to take possession of the popular consciousness. The old dogmas had lost their power, truth and morality needed to be built afresh on deeper foundations. The threatening danger roused among the Greeks, Sokrates, and in the eighteenth century, Kant.

'Between Sokrates and Kant,' says Schopenhauer[1], 'there are many points of resemblance. Both reject all dogmatism, both profess complete ignorance as to things metaphysical, and the speciality of both lies in their consciousness of this ignorance. Both maintain, on the contrary, that the practical question as to what men should do or leave undone may be ascertained with certainty, and this by themselves without further theoretical preparation. It was the fate of both to have immediate successors and declared disciples, who nevertheless departed from their principles in this very particular, and, cultivating metaphysics, introduced entirely dogmatic systems of their own; and further, that notwithstanding the great divergence of their several systems, all professed themselves to be derived respectively from the doctrine of Sokrates, or of Kant.'

My plan only allows me to deal with the theoretical side of the Sokratic philosophy, and that of his successors, in order to show wherein the opposition to the earlier doctrine consists, together with the deepening of philosophic thought and its increasing tendency in the direction of what is the principal subject of this work.

[1] Parerga und Paralipomena, i. 46.

The substance of the Sokratic doctrine is a rational psychology, educed from the conviction that human reason is a principle that may be opposed to the powers of nature, which had hitherto received almost exclusive attention, or was at least altogether distinct from these; that we possess in it a source of eternal truth, amid the deceptions of the senses, a firm and lasting resting-place amid the eternal changes and transformations of all things, and hence too a secure and irremovable basis for moral action and all the higher possessions of mankind, the existence of which was questioned by the Sophists, because they derived all such ideas from human convention or ordinances, i.e. subjective inclination. This explains why Sokrates occupied himself principally with definitions of moral ideas, and what he meant by the often repeated assertion that virtue was knowledge.

This may be seen also from particular illustrations. The opposition to the doctrine of strict natural necessity of an established external causal chain, appears most clearly in the well-known passage[1] in which Sokrates speaks of Anaxagoras, who first made the modest attempt to introduce a rational principle, the νοῦς, as an explanation of the nature of the world; and in which he describes his disappointment on finding, instead of what he expected, e. g. explanations why the earth is like a dish, why it is best for it to be so, &c., only explanations from natural causes. This was, according to Sokrates, as if some one were to be asked why Sokrates was sitting in prison and then began to explain the act of sitting in accordance with the rules of anatomy and physiology, instead of speaking of the condemnation which had brought him there and of the thoughts

[1] Phaedros, 97.

which had led him to reject the means of flight and await his destiny where he was[1].

The incompleteness of materialism, or the explanation of the world by external mechanical causes, is here plainly visible, and hence proceeds another and far more important principle, which it becomes necessary to investigate.

There is hardly any mention in Plato's works of Demokritos and the theory of atoms, but the omission is well supplied by Aristotle. The latter fully recognised the one-sidedness of the materialistic view and pointed it out with great force, *apropos* of the manner in which Demokritos conceived the soul as the vital principle of the body. According to this explanation, the soul was to consist of subtle, smooth, round atoms, like those of fire: these atoms were extraordinarily mobile, penetrating the whole universe, and bringing about all the vital motions in human beings. 'If this be so,' says Aristotle, 'then there are *two* bodies in every one, and if the infinitely subtle atoms may be conceived as the cause of motion, there is no reason why the same effect should not be ascribed to the larger and coarser parts.' But this, as he expressly insists, does not constitute the essential nature of the soul, nay cannot so much as be an accident of it. The essence of the soul consists in choosing and knowing, and mechanical explanations, mere causes of motion, can never afford the slightest explanation of the proper functions of the soul, i.e.

[1] The same thought has been expressed by Leibniz where he says one might explain Cæsar's crossing the Rubicon by the laws of mechanics, contraction of muscles, &c., whereas to the true understanding of Cæsar's step, the whole history of Rome, psychological insight into the remarkable personality of the consul, and much else, were indispensable.

of thought, perception, pleasure and pain, or the like[1].

Upon this Lange takes up the cudgels and maintains that Aristotle failed to understand the greatness of Demokritos, which consisted precisely in the rigorous logic with which he brought all actions back into the orderly chain of mechanical causation. 'Any system of philosophy which aims seriously at comprehension of the phenomenal world must return to this point. The special case of those motions which we call rational must be explained by the universal laws of all movement, or there is nothing really explained. The failing of all materialism is that it *ends* with this explanation, just where the highest problems of philosophy begin. But any one who, relying on imaginary rational knowledge, should dabble in would-be explanations of external nature, *including the rational actions of mankind*, is working to upset the whole foundations of our knowledge, whether his name be Aristotle or Hegel[2].' This is an outbreak of the animosity above referred to as subsisting between positive and scientific thinkers and the memory of Aristotle. Lange is certainly in the right from the standpoint of the external contemplation of things, but when we are dealing with the soul, with reason, in a word, with consciousness, the mechanical theory has to submit; it has a right to be heard, but it is no longer dominant, in fact it is dominated in accordance with its own laws. It was the merit of the Sokratic school to have clearly seen and proclaimed this.

A further and more considerable merit may be claimed for Aristotle, in opposition to the materialistic school, namely, his insistence upon the 'final

[1] Arist. de Anima, cap. 5.

[2] Geschichte des Materialismus, i. p. 20.

causes' or adaptation of means to ends in nature. A vast portion of the whole realm of natural existence and development remains absolutely closed against those who fail to recognise this. These things can only be understood, or indeed exist, with the assumption of an intelligent principle, which does not, of course, mean to say that a maker or creator outside the world has made things as they are, to suit his own purposes or the purposes of mankind. Schopenhauer observes: 'Three great men have wholly rejected teleology, or the theory of "design," and many little men have chanted in echo after them. They are Lucretius, Bacon of Verulam, and Spinoza. But in all three we see clearly the source of their denial, namely, that they imagined teleology to be inseparable from speculative theology, of which they had so great a dread as to wish to get out of its way when they scented its approach from afar.... The attack of Lucretius (iv. 824–858) upon teleology is so crass and crude as to answer itself. Bacon does not distinguish between organic and inorganic nature (which is the point in dispute), but mixes them in his illustrations indiscriminately together. He then banishes final causes from physics into metaphysics, which is to him, as to many even at the present day, almost synonymous with speculative theology. Spinoza could think of no other expedient to bar the way against the physico-theological proof and the view based upon it, that nature exists for the sake of man, than the desperate one of denying any adaptation in the works of nature, a contention which must appear monstrous in the eyes of all who have any knowledge of organic nature. Aristotle contrasts very favourably with these later philosophers, and indeed appears in his most brilliant colours on this occasion. He goes

straight to nature, and is untroubled by any physical theology. The idea has never entered his mind, and it does not occur to him to look at the world with a view to deciding whether it is a bit of machinery or no. But after honest and diligent study of nature, he discovers that she works everywhere towards some purpose, and he concludes, "Nature does nothing in vain[1]." And again in the books De Partibus Animalium, which are his comparative anatomy: "Nature does all things for some purpose or other. At every turn we say that such a thing exists for the sake of such another, whenever we see an end towards which the movement tends. We gather from this that there is something of the kind that we call nature. But the body is a tool (organ), for every member is there for some purpose, and so also is the whole." At the end of the books De Generatione Animalium he expressly recommends teleology, and blames Demokritos for having denied it, which is just what Bacon, in his prejudice, selects for praise. In point of fact any sane and normally constituted mind would arrive at teleology from the observation of organic nature, but, unless under the influence of inherited opinions, by no means equally at natural theology, nor at the anthropo-teleology condemned by Spinoza. With regard to Aristotle, it should be noted that his teaching, so far as it deals with inorganic nature, is full of errors, as he is guilty of the most serious blunders in the rudimentary conceptions of mechanics and physics. But it is quite otherwise in his treatment of organic nature; this is his proper field, and here we can admire his wealth of knowledge, his keen observation, and his profound insight.'

[1] De Respir. c. 10.

All this Aristotle was able to accomplish: he might have become the founder of Natural History, because he saw and recognised the sway of intelligence in nature and assigned its due place thereto. But if we compare with the above lucid exposition of Schopenhauer the following passage from a generally sound and serious thinker, we shall see what a vast confusion of ideas still prevails with regard to the interpretation of nature, making the demand for serious inquiry and a return to the metaphysical principles of knowledge an irresistible necessity.

Lange says: 'We find in Demokritos no trace of that false teleology which may be called the arch enemy of natural science; but we also find no attempt to explain the development of design *by* the blind sway of natural necessity (!!). We know that this last fundamental proposition, common to all materialism, took its rise, in a clear though somewhat rugged shape, from the Hellenic philosophy. What Darwin, with all the abundance of positive knowledge at his command, has done for the present generation, was done for antiquity by Empedokles, in the simple and momentous suggestion that cases of adaptation abound, because in the nature of things it happens that what serves *its purpose* is preserved, and what fails to do so perishes at once.'

What a chaos, a medley of opposite and irreconcilable conceptions[1]! And yet the fallacy here in-

[1] Still plainer and more startling is the following passage (*loc. cit.* i. 72) about the materialism of the Stoics: 'That sounds sufficiently materialistic, and yet the decisive feature is wanting to this materialism—the pure material nature of matter; the origination of all phenomena, including adaptation and intelligence, *by the motion of matter in accordance with universal laws.*'

volved is no other than the very programme of the majority of contemporary Darwinians: 'To explain everything without exception by exclusively mechanical causes.'

While Aristotle had most to say about Demokritos, we find in Plato frequent points of connection with Herakleitos, whose depth received due recognition in a well-known utterance of Sokrates. The reaction against naturalism and sensualism, which led naturally, under his guidance, to human reason as the true source of all knowledge, roused his greatest disciple to the conviction that it belonged to the nature of reason to be able to separate and retain what is durable and persistent, as a fixed pole amid the universal flight of phenomena. This is the first condition required for the existence of any kind of knowledge. For the idea of change itself presupposes that the earlier condition is held fast by the mind; the content or matter of knowledge is always something *new*, but never something *different*. 'We could not take for granted even the possibility of knowledge,' says Sokrates in the Kratylos[1], 'if everything were changing and had no persistence. For if, for instance, this idea, knowledge, remains unchanged in all that constitutes it knowledge, then knowledge has permanence and *exists*. But if the idea of knowledge itself is changed, it becomes transformed into an idea other than the idea of knowledge; and it is therefore no longer knowledge. But if it were *always* changing,

Let us invert the terms—the origination of the motions of matter, including weight and all inorganic movements, by intelligent principles in accordance with the universal laws of thought,—and the whole absurdity of the proposition becomes evident.

[1] Kratylos (Jowett's translation), 440.

there would never be any knowledge at all[1]. And for the same reason there could be neither an object nor a subject of knowledge. If however there exists a subject and an object of knowledge, if moreover the Beautiful, the Good, and every other kind of being exists, these ideas obviously bear no resemblance, as we maintain now, to the current of motion.'

We see from this passage, which also contains the germ of the Platonic theory of Ideas, that the function of the reason is virtually that which Goethe characterises in the language of poetry—

> 'Und was in schwankender Erscheinung schwebt,
> Befestiget mit dauernden Gedanken.'

Reason and its conceptions constitute the firm starting-point of true knowledge in the whirlpool of the phenomenal world, sensible impressions, and vicissitudes. And this great truth is of such significance that its discovery may also be said to have opened the way for the first time to self-examination and self-knowledge.

Reason, or the rational principle (*τὸ νοητικόν*), is possession of the ideas, e.g. of the good, the true, the beautiful; this possession is lasting and unquestionable; the ideas are recognisable everywhere, and always as the property of the reason. The question is how to find a bridge which will unite these ideas and the phenomenal world of sense and matter. For as to the latter Plato held the Herakleitean view of the eternal flux, alternate growth and decay, to be unassailable.

At this point the antagonism between the Platonic

[1] What Plato was the first to express clearly and convincingly was to be thoroughly established by Kant. 'If time and space were not original possessions of the intelligent subject, there could be no such thing as experience.'

doctrine and materialism first presents itself. To Plato, reason is an active faculty of the human soul. Materialism leads necessarily to sensualism, as soon, that is, as it discerns its own incompleteness, and wishes to take the spiritual side of things into account. It explains the latter, like everything else, as an *effect*. In other words, the senses are stimulated and agitated from without, they feel, and then from out of these feelings the images of the outer world form themselves, the whole intellectual life accomplishing itself mechanically, of itself. Sensible perception is not the source of knowledge, but knowledge itself. In the age of Sokrates this view was represented by Anaxagoras, and it was subsequently developed with strict materialistic logic by Epikuros. The images in the understanding are produced by a constant emanation of infinitesimally small and subtle parts from the surfaces of bodies. In this way copies of the things enter materially into us; their frequent repetition gives rise to the images of memory, and so the soul, without itself knowing how, attains to thought and a perception of universals, by the sole constant action of the outer world. Perception and sensibility then remain, notwithstanding the distinctly spiritual (i. e. conscious) character of their nature, imprisoned in the circle of materialism. This opinion is the more probable because the organs of sense, by means of which perception is accomplished, are themselves objectively perceptible, i.e. material. Hence even Plato ascribes the perceptions of sense directly to the organs, the eyes, ears, and other bodily instruments, while he shows with victorious cogency the necessity of an intellectual principle, which combines, compares, and distinguishes the common element in all perceptions, and so

penetrates to the essential qualities of things. 'For,' says Sokrates, 'no one can suppose that we are Trojan horses, in whom are perched several unconnected senses, not meeting in some one nature, of which they are the instruments, whether you term this soul or not, with which through these we perceive objects of sense[1].' Sound and colour, taste and smell are different things, but by what power or instrument, asks Sokrates, does that sense take effect which indicates the common qualities of things perceived by different senses, such as being and not-being, likeness and unlikeness, sameness and difference, unity and other numbers, etc. Theætetos is compelled to reply that there is no separate organ for these things, but 'the soul perceives the universals of all things by herself[2].' The soul perceives equally by the touch the hardness of that which is hard and the softness of that which is soft. 'But their existence and what they are, and their opposition to one another, and the essential nature of this opposition, the soul herself endeavours to decide for us, reviewing them and comparing them with one another.' 'The simple sensations which reach the soul through the body are given at birth to men and animals by nature, but their reflections on these and on their relations to being and use are slowly and hardly gained, if they are ever gained, by education and long experience.' 'No one can attain truth who fails of attaining being, and he who misses the truth of anything can have no knowledge of that thing; therefore knowledge does not consist in impressions of sense, but in reasoning about them, and the two are not identical[3].'

Starting from this newly-won point of vantage,

[1] Theætetus (Jowett's translation), 184. [2] Ib. 185. [3] Ib. 186.

which Leibniz and Kant were to take as starting-points hereafter, Plato proceeded towards fresh and pregnant discoveries, a part of which still underlies our whole mode of thought, whilst the one-sidedness of some of his preconceived views has also endured as a legacy of hampering oppression to subsequent generations.

The first great truth for which we are indebted to him is that, in order to direct human knowledge to its proper goal in the interpretation of the true nature of things, we must start from knowledge itself, from the peculiar gift of reason which has been allotted to mankind. The 'Know Thyself' of the Delphian God is the master-key of which in a happy hour Sokrates and his great disciple have possessed themselves. The student's gaze is turned inwards :—

> 'Es ist nicht draussen, da sucht es der Thor,
> Es ist in dir, du bringst es ewig hervor.'

A theory of knowledge is now possible and necessary; it was created by Plato and completed by Aristotle with the addition of Logic.

This is the positive side. On the negative side must be set the premature conclusion that this reason must be the property of an immaterial substance, the soul, to which pure thought belonged as its speciality. This is again the ineradicable realism of the whole ancient world. Philosophy is striving after being, it insists upon an ontology. As there is a pure thought, it introduces by hypostasis a pure thinking substance. Plato indeed has an easy task in dealing with materialism. For though he could not persuade the Giants and Gods who were fighting about the nature of essence[1], and who 'contended that

[1] Sophist, 244.

the things only which can be touched or handled have being or essence,' yet all thinkers would certainly be on his side when he maintained that justice, reason, virtue, etc. are not material entities, and that the soul to which these qualities belong must therefore also be immaterial. But it is one thing for the soul to exist and another for it to be self-existent, and the problem had to wait till Kant came to give it its due form. Plato exalted the soul into a self-subsisting subject of pure thought, free from all delusions of sense. He maintained its immortality, and anticipated that after death, when released from the obscuration and fetters of a material body, it would know with far more perfect knowledge the true nature of things. This is set out more at length in the Phædo (10) and Timæos. The summary of his exposition in the latter dialogue is given by Sextus Empiricus in these words: 'It is an old adage, accepted too by the physicists, that like can only be explained by like. Plato has used this argument in the Timæos to prove that the soul is immaterial. Light, he says, which perceives light, is of the nature of light, hearing which catches the vibrations of the air must correspond to the nature of air, and similarly the sense of smell by which vapours are perceived must be vaporous, and the sense of taste which receives fluidity must partake of the nature of fluids. And the soul too, which conceives things immaterial, such as the number and limitations within which bodies are contained, must itself be immaterial[1].' The passage is interesting because the reference here is only to the pure forms of mathematics, which Kant

[1] Adv. Math. vii. 116, 119. (See also Schopenhauer's Parerga, i. 48.)

will show to be the proper *a priori* material for reason.

The second great truth is that thought is accomplished by means of conceptions and ideas, and that these always contain or represent something universal, different both from material things and from sensible perceptions; that these abstract, general ideas are the true object of rational thought or intellectual activity, and that in them the reason discerns the permanent, essential, and eternal amid the stream of appearances. This great truth, the doctrine of abstract ideas, or universals, sways the whole after-time, remaining as an apple of discord throughout the history of mediæval philosophy. It was received as an established fact by all modern philosophy, and, as Locke was the first to see, it will one day yet come to be of the greatest significance for a knowledge of the nature of human reason, namely, when people have become convinced that the history of the origin and development of the human reason may be written at last—by the help of the philosophy and history of language.

The darker side of the Platonic doctrine of Ideas, which otherwise can hardly be overpraised, is due to the ontological ambition which here again overreaches itself by transforming these ideas into real, essential, self-subsisting *things*. We see plainly how Plato was led to this assertion. Like all the other philosophers of antiquity, he regarded as the final problem the question, What is real *Being* in contradistinction to appearance, to phenomena? He saw the material world with the correlated sensible perceptions in eternal flux and change, he felt that the reason aspired after permanency, such as it possessed within itself. And thus the material world

was degraded into a seeming existence, a darkening veil, while truth and reality were attributed only to the objects of reason, the ideas. 'First,' he says, 'we must determine what is that which always is and has no becoming, and what is that which is always becoming and has never any being. That which is apprehended by reflection and reason always is, and is the same; that, on the other hand, which is conceived by opinion with the help of sensation and without reason, is in a process of becoming and perishing, but never really is[1].' The ideas are the eternal elements to which true being must be conceded. While single beings or material individuals pass fleetingly by, arise and decay, we see that their kind lasts on, or, to express it in the more drastic language of Schopenhauer, the ardent adherent of the doctrine of ideas, 'It is the same cat that plays in your yard to-day as played and felt and was 4000 years ago.' The ideas are the prototypes of things, disguised and obscured by matter in the phenomenal world, which stands with Plato for the manifold, the unconditioned, indefinite, fluctuating, the relative, or in fact for the not-being. Even the soul imprisoned in a body may however emancipate itself from this darkness and attain gradually to a comprehension, or rather a recollection of the ideas of things. For all knowledge is recollection. The soul, in its purity, luminous and immaterial, dwelling in a former state of existence with the eternal gods, has beheld in direct vision these ideas or prototypes of things, the creations of the gods. We shall see hereafter how much of profound truth lies hid in this mythological disguise.

The next point to be observed is, that if meta-

[1] Timæos, 27, 28 (Jowett's Translation).

physics is the science of the inconceivable, upon which rests all the intelligibility of things, and of the truths necessarily presupposed, which the critical reason afterwards discovers for itself, by cautiously eliminating all empirical knowledge and all logical deduction,—then, it must be admitted, the sphere of metaphysics is made too conveniently wide and comprehensive. To claim all ideas, that is to say, everything which human language designates by a word, everything that presents itself as a distinct being in the phenomenal world, whether it be hairs, dust and dirt, or tables and chairs and benches, as an *a priori* possession of the soul, and to foist it upon the everlasting gods, is tantamount to reducing the whole of philosophy to a matter of religious faith; whereas its chief aim has always been to attain independent existence, and knowledge in the strength of its own nature. To avoid mistakes and misjudgments we must keep before our minds the whole grandeur of the new truth as it appeared for the first time at the dawn of idealism.

Other objections and qualifications of equal weight have been urged even in antiquity, some of which did not escape Plato himself, if indeed the Parmenides is by his hand.

The Platonic dualism served to accentuate the chasm between the world of ideas and of phenomena, a difficulty which presents the real *crux* of modern philosophy. Plato's plan was to allow the phenomena to become absorbed in the ideas, while the material world was banished into the realms of non-existence. But this is evading, not solving the difficulty, for in all that Plato himself predicates of matter we recognise qualities that only belong to something which has a real existence. That matter

opposes itself to the formative power of ideas, that it is that wherein the maker of the world reproduces the ideas as a mechanic works upon his material, that it is not merely an impediment to knowledge by its mutability and diffusion in space, but that it actually sets itself as a bad, ungodly principle in direct antagonism to the creative cosmic forces—these are too grave accusations to be directed against what does not exist. Matter may be the negation of knowledge, but on that account to deny its existence is to identify being and knowing, a course which is easily accounted for by the predominance of the old ontological phantom at this as well as at every other stage in the history of ancient philosophy.

This difficulty is brought out by Parmenides in the Dialogue[1] when Sokrates makes a cautious attempt to distinguish between ideas as thoughts of the soul, and ideas as they constitute the unity of things in the phenomenal world. Either the phenomenal world must be endowed with intelligence, so that all things think, or it must be able to bear within it thoughts, without however thinking. And when Sokrates suggests that the ideas might be the patterns existing in the realm of being, and single things only copies of them, Parmenides replies, with justice: Copies exist because of their resemblance to the original, and if the original pattern is an idea, the copies cannot be anything different; each idea therefore must presuppose another and then another, in an infinite series. And he concludes his objections by admonishing Sokrates: 'As yet you understand a small part of the difficulty which is

[1] c. 6.

involved in your assumption, that there are ideas of all things, which are distinct from them.'

The limits within which logical idealism is confined have remained always impassable. If the mind is self-existing, wholly independent of matter, then all its functions and all its objects may be of an intellectual kind, and there is no possible transition to the phenomenal or the objective world. The only alternatives are, either—

To attribute true, external reality to intellectual objects, i. e. to the ideas, as was done by the greatest representative of ancient idealism, Plato, who left ancient philosophy as ontological as he found it;

Or—to doubt the reality of external objects and to conceive them either as the product of the mind itself—as it were a true kind of dream—or, again, to bring them into relation with the conscious intelligence by a miracle; and this latter path has been followed by modern philosophy since it accepted, with Descartes, the intelligent subject as the sole starting-point of all our knowledge.

Deliverance from the insoluble dilemma was only to be brought to the much-tormented mind of man by Kant, and by no one before him.

The reality outside the thinking subject claimed by Plato for the ideas, rightly roused the antagonism of his great pupil Aristotle, whom we have to recognise as the greatest representative in the old world of empiricism and the scientific method; notwithstanding the repudiation and hostility which he has met with from the modern representatives of the same tendency.

He showed how the ideas constituted a second world by the side of the actual one, how they must necessarily remain eternally stationary, disconnected,

ineffective and motionless, how there could be no causative power in the bare idea, since the cause of events lay always in something *moving*, i. e. in mechanical natural force; in a word, all genesis of things from one another, all connection of things one with another, becomes impossible as soon as the ideas are supposed to be self-subsisting, individual substances.

While Plato had fairly thrown empiricism overboard, Aristotle accepted it as the foundation on which all knowledge must be rooted. In reality single things *do* exist, this particular horse, this particular tree; always and under all circumstances thought must proceed from the particular substance, the τόδε τι, as to which a general statement must be made. The real being is that which is and can be subject only, never predicate.

At the same time Aristotle is far from acquiescing in the disintegration of the world according to Demokritos, and seeking for explanation among the phenomena alone. He is a worthy follower of Sokrates, and knows that we must begin with reason and its functions, with general truths and principles. He demands a *prima philosophia* whence everything else is to be derived by the mind, but which must serve first as a base for the conception of nature and its general features. He enunciates the great principle that there can be no science of particulars, and also no science of single sensations; and that universals, abstract ideas, are the necessary factors of the faculty of knowledge. He says, in agreement with his great master, Ἀρχὴ καὶ τέλος νοῦς[1].

But as to the origin of these abstract ideas, he diverges from the latter, and enters upon an opposite

[1] Eth. Nic. vi. 12.

course. These ideas are not the original possession of reason, but the latter has only *potentia*, a disposition to frame and to develope these general notions. They contain, it is admitted, as Plato rightly divined, the *essential* elements of things. But the human soul has a power of grasping and retaining these essentials, which is wanting to the souls of brutes. And, in thus following the reasoning of Plato, Aristotle ascribes[1] separate existence, immaterialness and immortality to the kind of soul which is capable of this special rational thought. But he restricts this concession by saying that if thought is not possible without perception and imagination, the soul cannot be conceived apart from the body. And Schopenhauer[2] says with truth, that in other passages, e.g. De Anima, iii. 8, he lays down what has been since formulated in the proposition, 'Nihil est in intellectu quod non prius fuerit in sensibus;' so that he denies the condition according to which the soul might be conceived as an independent being.

The relationship between Aristotle and Plato may be stated thus, in order to do justice to both:— After Plato had accomplished the task of tracing the organisation and functions of the reason to a certain depth and so casting the light of this one spiritual principle upon the world as it presents itself to the human mind, Aristotle next began to seek, by the light of this knowledge, for the path from Platonic metaphysics to physics; he sought to vindicate the rights of the actual, of the material world, of sensible perception, and particular existences, and he thus became the philosophical

[1] De Anima, i. 1. [2] Parerga, i, 48.

founder of the inductive method, which starting from the given particulars proceeds by abstraction to the universal and regular. He allowed the rights of reason, but demanded also due regard for the actual and sensible, which, he saw, must furnish the material for rational thought; he knew, as Schopenhauer points out, that all pure and abstract thought has borrowed its original substance from direct experience or intuition.

And what constituted in his eyes the essence of things, the universal which was to be apprehended by the reason, the τὸ τί ἦν εἶναι, which makes everything what it is? His answer is, the *Form;* a truth which remained long as a dormant germ in the human mind, till at last it unfolded itself with Kant in a rich growth of philosophic clearness. This form however clearly demanded as a preliminary the corresponding notion of *matter*, and Aristotle has the further merit of having grasped the full significance of this important conception and having assigned to it its place in the general scheme of nature. Matter is the permanent, unchangeable; all changes take place in it, but they are only changes in the form; mere formless matter (materia prima) and pure form do not exist, the two are everywhere united (σύνολον). Rational knowledge apprehends pure form, and it is in so far the form of forms. There is a series of beings, so that the one which from one point of view is form, in another is matter.

The importance of these luminous principles is evident, and no less so what was incomplete and contradictory, and continued to torment posterity accordingly. To the latter category belongs the contradiction that anything so external as pure form can constitute the essence of anything, the exaltation

of matter to the dignity of self-existence[1] (or false realism again), and lastly, the conception of matter as a pure, formless, passive substance, which must receive its motive impulse and its form from without, i. e. from the world-creating, absolute Intelligence. The latter is a false conclusion *a priori*, the origin of which must be pointed out.

The Universals or general notions are, according to Aristotle, educed by the human intellect, which is alone capable of this kind of knowledge, from amongst the things presented; the reason comes in contact with the Divine Maker, whose thoughts it thinks again by conceiving their pure forms. The difference between Aristotle and Plato shows itself here also, the former conceiving human reason more as an *intellectus ectypus*, the latter as an *intellectus archetypus*.

With the realisation of the mind and its forms on the one hand, and of matter with its forms on the other, the philosophy of antiquity had reached its utmost accomplishment. Plato and Aristotle are the electric poles which gave this direction to the current of thought for the next two thousand years.

The closing period of ancient philosophy may be briefly characterised by a summary of its results. Four elements present themselves as the ultimate elements of being, and must be opposed or reconciled as realities. As it has been the tendency of philosophy until Kant to set more and more on one side the self-existent, or 'things in themselves,' the following table will show the connecting link between ancient

[1] The effect of this error meets us jarringly in the doctrine of the Stoics. Real existence is always material, and therefore, God, the soul, the virtues, the affections, in a word all ideas, must be material.

and modern philosophy and the progress from one to the other.

THE THING IN ITSELF.

Idealism. (Apriorism).	Realism. (Empiricism).
Plato.	Aristotle.
A.	B.
a. The Mind.	a. Matter.
b. The Ideas.	b. Form.

We shall see how Descartes consciously approached the task of eliminating the subordinate members A b and B b, and disputing their self-subsistence. There remained then the two chief opposites, which remained unreconciled till the advent of Kant.

In conclusion, I will briefly attempt to show, by the light of a truer theory as to the origin of reason, how the first attempts of this faculty at self-examination must necessarily have led to these great results reached by Aristotle and Plato.

The obscure consciousness of this origin and the method conditioned by it served as a guiding star to these great Greeks, who succeeded in carrying to a considerable distance their investigation of the action, nature, and function of reason. Having reached a certain limit, they were unable to proceed further, and assumed some forms of thought to exist *a priori*, and to be incapable of further solution, which are known by us to be empirical, i. e. capable of historical explanation. But the Greeks did not distinguish between innate and *a priori*, they took for granted the rational man with all his gifts, and did not dream of seeking for his origin, or the stages of his earlier incomplete development. Epikuros alone, whose views concerning the gradual develop-

ment of the human race are contained in the fifth book of Lucretius' didactic poem, is an honourable exception to this rule. But as his explanation of the origin of language is throughout materialistic and sensualistic, while the nature of the reason was not recognised as an object of investigation, no further progress was made beyond this feeble, though meritorious beginning.

The profound study of more extensive linguistic material and the important results which comparative philology has placed at the service of the philosophy of language enable us to affirm that human reason came into existence *with* and *by* language. General ideas were made possible by words, and they originate with sensible intuitions, but they become exalted, perfected, differentiated and spiritualised by a gradual growth and evolution continued through the ages.

The real point however whence all language and all reason has sprung is the common activity of men and the creations due thereto. In proportion as the latter are multiplied, light is thrown upon the two dark regions, the inner consciousness of man, and the hitherto uncomprehended outer world which is accessible to impulses of sense alone.

The sensitive, conscious subject is necessarily presupposed in all knowledge, but for a length of time this fact remains obscure. By a peculiarity of human reason the objective or external world is intelligible at an earlier stage than what is within. The former serves even as a key to the latter. Before the dawn of reason the external world itself is an object of desire, fear, and hatred, but not of knowledge.

But what first made Reason possible? The action of the feeling and conscious being upon the external world. This effective action marks the real boundary

between two otherwise separate and mutually unintelligible worlds, the worlds of feeling and of matter. This boundary is the proper domain of reason and of the spiritual formative will; what is formed reappears in consciousness as perception, but as something well known, familiar, and intelligible. This is the origin of the human faculty of representation or imagination, which grows along with reason, strengthens it, and continues uninterruptedly to act, and to be acted upon by it, so that some eminent thinkers (e. g. Berkeley and Hume) have taken both to be identical, and have held all *conceptions* to be the same as intuitions or 'ideas,' in the sense in which the word is used by Locke, i. e. mental representations of existing objects.

The formative activity of mankind had to pass through its period of development, of slow and continuous progress towards perfection. And this was only possible by the help of language. Language is the echo within of what has been done without, and in this too it serves to connect the external and the internal. But it is much more than this, it obeys the authority of the human will, it is at the present day an instrument upon whose keys (i. e. words) the human mind plays with marvellous skill so as to bring out enchanting harmonies. This power, which now seems to call for such astonished admiration, arose from very trifling and apparently insignificant beginnings: from the circumstance that in the few and unimportant pursuits which were carried on in common by primitive groups of men, certain sounds associated themselves with the action, which differentiated themselves and gradually acquired the power of recalling to mind these actions and the sensible image of their phenomenal effects. The

cries thus acquired a *meaning*, and so became the germs or roots whence all human speech has been regularly developed, notwithstanding all differences of sound.

This is the origin of words, and it is at the same time the origin of ideas. For words and ideas are inseparable, like body and mind; they are the same thing under different aspects.

A spiritual tradition becomes possible through words, and the community lives a common spiritual life. The same capacity is developed and educated in the younger generation, and the life of the community continues on from millennium to millennium, with heightened and perfected intellectual vitality.

We can appreciate now the profound wisdom of Plato in the utterances: 'In these ideas or conceptions'—whose dependence upon language he did not conjecture—'the whole work of human reason is accomplished.' What is the lasting, inalienable possession of this same reason? Surely that which it can ever form and produce again and again at will, its own creations, whereby the contemplative faculties too are constituted, so that the mind learns gradually to conceive the remaining objects of the outer world also in their appropriate forms and to designate them by names. The very word chosen by Plato points to this origin of his doctrine of ideas.

That which Plato adds to his doctrine as an appendix, or as something merely incidental—namely that human manufactures too, such as tables or beds, are formed in accordance with eternal ideas—appears to us as undoubtedly, what it was unconsciously with him, the starting-point of his theory of the universe. This appears too from the expression which he often makes use of as the equivalent of ideas, patterns

(παραδείγματα[1]), after which the actual beds and tables are supposed to be made; and again from what he says of the relations between matter and ideas, showing how the carpenter and the smith must be able respectively to put their idea of a shuttle or an awl into the iron or wood and so realise it[2]. The iron and the wood, i. e. the material, are of little consequence, the idea is the principal thing.

Thus for Plato, as for the human reason itself in its infancy, the world of human labour furnished the key which was to interpret the mysteries of the world to human reason.

We can now understand the connection with the universalia *ante* rem, and the recollection of a former state of existence. If we start, as Plato does, from reason as an ultimate *datum*, as an original property of the human soul admitting of no further explanation, it follows necessarily that the smith produces his awl and the carpenter his shuttle in accordance with the idea that is present to his reason. But the question remains how the men of to-day have become familiar with these ideas; how it comes that they are now really creative so that countless objects are formed in accordance with them? Certainly only because in the dim remotest past, the thing itself and the idea of it were formed at once by our ancestors, or rather developed out of some still earlier creation. This being, when first created and first thought, passes by tradition into the thought and action of unnumbered

[1] Parmenides, 132 (Jowett's Translation). 'The more probable view of these ideas is that they are patterns fixed in nature, and that other things are like them and resemblances of them; and that what is meant by the participation of other things in the ideas, is really assimilation to them.'

[2] Kratylos, 389.

generations, and is there constantly renewed, and in fact does only become present to the mind of individuals through a reminiscence of the former condition of the race. In the same way the present generation knows familiarly all the classes or orders of natural beings, because from ancient times the image of them has been imprinted on the mind and thoughts in this particular manner and under these particular forms. Language has wrought this miracle: this much is certain, and at the present day there is little difficulty in recognising the fact. But we must concede to Plato that this would have been impossible without reminiscence, and this is exactly the chief and most fruitful miracle, that the thought and feeling of remotest ages, borne along, as upon a stream, by language, should make its presence felt, on and on in every member of an ever-growing, ever-new humanity.

Aristotle too shows clearly in all the features of his doctrine the impress which the origin of reason has stamped upon its whole later development.

As he differs from Plato in removing the centre of gravity, of being and knowledge, more towards the objective or actual world, we should expect him to seek his principles also on the objective side of the boundary we have indicated. And this is in fact the case. He gives the name of Matter to the unknown Somewhat, lying in that direction, to which he ascribes absolute being. The name itself bears on its forehead the tokens of its origin. Ὕλη or materia is the timber out of which human activity prepares the most various objects and implements. Generalised the word comes to mean the raw material which is the necessary substratum of all that is done or wrought. That which human intelligence lends to this material

is its *form*, which is the second most essential and important principle for the comprehension of the whole world. But matter is not merely formed and modified by human energy; by some force to us unknown, it is itself always active and creative of new objects and new effects, which forthwith distinguish themselves in form. This matter, which is imperishable through all the changes of its form, appears properly as a substance, though the active, creative, and formative element is the world-spirit, the Deity. And here we come to the explanation of the universalia *post* rem. Human knowledge has first to discover these forms in nature, and to make them its own by experience, which becomes possible through reason; for feeling is the form of what is felt, but the reason is the form of the forms. For the rest, it may be observed that our theory of the origin of reason goes as far to justify the views of Aristotle as those of Plato; for although the creations of mankind indeed proceeded from obscure impulses of the will, they only grew into thoughts and conceptions by the sensible perception and contemplation of what was created. They were thus in the beginning more *post rem*, and afterwards more frequently *ante rem*. In many passages of Aristotle we see clearly how the true germs of his fundamental principle lay in this unconsciousness of the origin of human reason and the properties which it has derived from its origin. Thus especially in the famous passage[1]: 'But the soul may be compared to the hand, for the hand is the tool of tools, as the mind is the form of forms.' There is a profound reason for this parallel between the hand which shapes all things and the mind which comprehends all forms. 'All things that become,' he

[1] De Anima, iii. 8.

says in another place, 'must become something as something out of something[1].' This is just the scheme of human action. But the form is the essential part of the thing, as he says: 'The nature without the matter is what I call the essence of a thing[2].'

It has still to be observed that Aristotle, as he combined logic and a theory of knowledge with the explanation from natural causes, reconciled a greater number of principles than Plato, who never passed beyond the sphere of rational thought. His classification of causes under four categories, which bears a remote resemblance to Schopenhauer's 'Fourfold Root,' is a case in point. They are, matter, motion, form, and purpose; but here too the *a priori* form of human action is unmistakable. As form is the essential point, it becomes the aim of action, and in so far it precedes as (imagined) cause the real effective action (or motive cause). I have expressed my agreement with Schopenhauer in reckoning it among Aristotle's chief merits that he introduced the conception of design into the philosophy of nature. It is self-evident that here also human action could only serve as a type and lantern. He observes, with the obvious intention of explaining one by the other, 'If architecture were in the wood itself, it would then work as nature does.'

It still remains to note the false *a priori* track into which Aristotle was beguiled by his point of departure. Because the idea of matter had presented itself to him in the original scheme of human activity, he was led to conceive this as throughout passive and without qualities; for his highest ideal was naturally

[1] Metaph. vi. 7.

[2] Loc. cit., *Λέγω δ' οὐσίαν ἄνευ ὕλης τὸ τί ἦν εἶναι.*

a kind of matter, which the formative human mind might modify and work upon at will, since the form was the essential part of the thing. This separation of the inseparable gave rise subsequently to great contradictions and confusion of thought. The question arose whence motion was imparted to matter. Aristotle himself only attempted to fill in the gap by the most forced and laboured explanations, or rather, he was obliged to have recourse to a *deus ex machina*, when he assumed the existence, beyond the starry spheres, of God as the *primus motor*, the πρῶτον κινοῦν ἀκίνητον, that maintained all things in eternal motion. We shall see how this fundamental error of a self-subsisting quality-less matter weighed upon Descartes and his successors until Leibniz at last threw daylight on the point, by showing that the true essence of matter lay in action or force.

We have seen how the two greatest philosophers of antiquity had sounded the problem of metaphysics to a certain depth, though they were still far from the really final question, considering that one assumed those functions of the reason which admit of historical explanation to be ultimate truths, while the other believed himself to have attained the source of all reality and its thinkableness by the realisation or hypostasis of matter.

They had discerned the natural external forms of rational thought, and believed themselves to have penetrated its inmost nature, and so to have drawn back the veil which shrouded the mystery of being. They took man for granted, and after his image made the world.

They were still in the outer court of metaphysics. Much laborious effort remained before a mortal could

dare to boast of having penetrated to the very sanctuary and to ask the decisive questions :—

What is the last inalienable and unquestionable possession of reason ?

And why does it necessarily think in this wise, i. e. with the fundamental conceptions of matter and form ?

And can we after all ever learn anything respecting being itself ? Are we not rather confined within the bounds of the original forms of reason, and doomed never to escape from them ?

MEDIÆVAL PHILOSOPHY.

Ἐν ἀρχῇ ἦν ὁ λόγος καὶ θεὸς ἦν ὁ λόγος· πάντα δι' αὐτοῦ ἐγένετο, καὶ χωρὶς αὐτοῦ ἐγένετο οὐδὲ ἕν.—Ev. Joh. i. 1.

THE dark night of the Middle Ages has long been the subject of fable. There is no word of scorn or contempt which has not been hurled at the philosophy of the Schools. This lay in the nature of things. Every age in its youthful pride of life thinks itself justified in picking holes in the work of its bygone, superannuated predecessor, and in clearing the ground for its own new and wiser labours. A still later day does justice to both. It sees that each generation begins its progress by riding on the shoulders of the last, and that even the fiercest opposition directed against the past is only a phase of its continued development.

And accordingly it is now freely admitted that among the much-despised Schoolmen there were thinkers of the first rank, whose names may be set by the side of the most brilliant philosophers of ancient or modern times. But with this we are not now concerned. Every age should be measured by its own standard. The human mind was not, as has been imagined, asleep during the thousand years of mediævalism; still less was it sunk in the rigidity of death. There was development, albeit the slow development

of autumn, when all the juices are transformed into food and garnered up to nourish in the coming spring the fresh green, luxuriant growth, and supply material for a new and blooming world.

Any one who surveys with comprehensive gaze the development of philosophy as the thought of the world and its relation to mankind, will see in the tranquil intellectual industry of the Middle Ages a great and significant mental crisis, an important and indispensable link between ancient and modern philosophy.

It will be necessary to indicate, as has not I think been done before, the boundaries which separate these three great epochs.

I. Ancient philosophy is the philosophy of pure Objectivism. This starting-point is natural. It is the same as repeats itself to-day in the growth and development of every human child in its individual existence. The objective is the truly existing; towards this all thought and reflection are directed as to the pole-star of true philosophy. The Sophists, who first exalted the subjective element in human knowledge and described man as the measure of all things, were unmasked by the wisest of the Greeks as dangerous, immoral, deniers of truth and virtue, deceivers of men, and given up to ridicule as devisers of verbal snares and entanglements. The greatest achievements of ancient philosophy sprang, characteristically, from the reaction against subjectivism. The Beautiful, the True, the Good, are something *real*, not mere thoughts or images of human fancy. Sensation is either the means, the tool by which the thinking mind receives the actual world into itself, or it is itself thought, the impression or product of reality in man. Even the

highest discovery achieved in antiquity, that all knowledge has universals, not individuals, for its object, leads only to the spreading out of these objects in the world of reality either as Platonic ideas or Aristotelian entelechies. Language and reason are one. It occurred to no one that the word as something audible should be separated from the idea as something intelligible; nor did any one so much as guess at the origin of ideas, as human concepts, and their connection with sensible stimuli and perceptions. The Lockian noogony was inconceivable to antiquity; on the contrary, the effort to objectivise, to lend being and reality to all things, prevailed everywhere. The universals had hardly been discovered to be the true objects of human thought, when they themselves became realised either, according to Plato, as specially existing entities, side by side with the material things of sense, or, according to Aristotle, as the essential forms of things. That anything should exist *only* in the human soul, only as perception, thought, or representative consciousness—such a conjecture never presented itself to the minds of the ancients. Hence all their art too aims at objective creation.

All the philosophical systems of antiquity bear this stamp of objectivity. The Godhead is, even for Plato, the Demiurgos by whom the world is formed, and for Aristotle the first motionless mover of the spheres. The enigmatic metaphysical conceptions with which the Middle Ages tormented themselves were curtly set aside. Time is in Plato's eyes identical with the motion of the sun (*χρόνος ἡ τοῦ οὐρανοῦ κίνησις* or *ἡλίου κίνησις*, Tim. 37). And in the same way he identifies space with matter. According to Aristotle, space is something like a vessel,

separable from the things which it contains, and therefore neither matter nor form: it is *in* matter, which is therefore the place of place; it is that which lies beyond the limits of the terrestrial sphere. Time is, to him, the number of motion, considered as earlier and later. He only once observes, with deep insight, that it might be doubted whether there would be any time, if there were no soul (Phys. iv. c. 14), and decides that if soul or mind is alone able to count, there would be no time without mind.

The logical development of objectivism resulted on the one hand in materialism, and on the other in individualism. From the first beginnings of Greek philosophy we see the two tendencies distinguishing themselves, when Thales proposes water as the base of creation and at the same time assumes the whole world to be filled with gods[1]; for the gods are individuals who act in or behind phenomena. The two principles could only lead to irreconcilable conflicts, for the individual personal powers were only determined by their own will and therefore could never become objects of scientific knowledge, while with the conception of matter strict necessity or natural law had been introduced. For this reason Demokritos and his successors are counted as mortal enemies of religion. Hence too the lofty enthusiasm with which Lucretius proclaims the doctrine of Epikuros, and soars above the religious delirium which still enveloped the world in its gloom. It was an enthusiasm proceeding from reason's attainment of self-consciousness, when it first began to recognise in the broad world spread out before it such law and order as constituted its own very nature. Reason for the first time be-

[1] Θαλῆς ᾠήθη πάντα πλήρη θεῶν εἶναι. Arist. de Anima, i. 5.

held its own image in the mirror of objective existence. And although the materialistic school proper did little in antiquity to advance the exact sciences, Lange is right in saying[1], 'that merely to refer the enigmatic processes of nature, growth and decay, the seeming disappearance and unexplained renewal of matter, to a single all-embracing, so to speak, tangible principle was itself something like Columbus's egg in the natural knowledge of antiquity. All the divine and dæmonic goblin array was set aside at a single stroke, and whatever naturally profound minds might be inclined to think of what lay *behind* the phenomenal world, this world itself now lay unclouded before the spectator's gaze. Even genuine disciples of Plato and Pythagoras experimentalised or meditated on the processes of nature without confounding the world of ideas or mystical numbers with the immediate data of sense. This confusion, which has been so marked in the philosophy of some modern Germans, only began to appear in Classical antiquity with the general decay of culture in the time of the Neo-Platonic and Neo-Pythagorean rhapsodies.' Lange accounts for this intellectual sobriety by the admixture everywhere of materialistic elements; but in my opinion it is due to the essential character of the ancient mode of thought, to the naive, unhesitating objectivity which always starts from and proceeds towards the actually existing.

The greatest achievement of the old world in moral or practical philosophy, the doctrine of the Stoics, which aspired to make men independent of destiny, and by throwing them upon themselves to raise them above themselves, bears throughout the

[1] Geschichte des Materialismus, i. 95.

stamp of this character. Notwithstanding their affinity with Christianity, which allows some Stoical views to be called distinctly Christian, the Stoics were unable to free themselves from the objective delusion and the supremacy of words; and they maintained accordingly the material nature of the Deity, of the human soul, and even of the virtues and abstract conceptions, relying on the argument that everything real must be corporeal. 'Primum exponam,' says Seneca, 'quid Stoicis videatur, tum dicere sententiam audebo. Placet nostris quod bonum est, esse corpus; quia quod bonum est, facit; quidquid facit, corpus est. Quod bonum est prodest, faciat autem aliquid oportet, ut possit; si facit, corpus est. Sapientiam bonam esse dicunt, sequitur, ut necesse sit illam corporalem quoque esse.' (Epist. 106.) In the same way, justice, courage, soul, virtue, arts, errors, affections, discourse, thoughts, even silence and walking, are corporeal things (Epist. 113). No greater proof of absolute objectivism can be imagined than that the school which taught monotheism, the immortality of the soul, the universal brotherhood of man, and recognised virtue and wisdom as the only true good, should have been able to conceive all human conceptions only as corresponding bodies. The Christian dogma of the resurrection of the body and of transubstantiation had much in common with this doctrine, and among the Fathers of the Church we accordingly find Tertullian adopting as his own the views of the Stoics. The world, according to the Stoics, is the embodied, or objective Logos (λογικόν ἐστιν ὁ κόσμος), an uninterrupted causal mechanism presides everywhere, and all things accomplish their predestined work in accordance with this order. It is in a sense an anticipation of Spinoza's monism.

Briefly: What has no objective existence is nothing. This is the ruling idea of ancient philosophy, and hence we see that Plato goes so far as to doubt the existence of matter because of its mutability and perishableness; while Aristotle ridicules the Platonic ideas as phantasms, and in all his investigations into metaphysical conceptions, such as the infinitude of space, etc., always contrives to state the question in this way: 'Is it anything Real or not?' Dikæarchos, his disciple, is thus quite consistent when he maintains: '*Nihil* esse omnino animum, et hoc esse *nomen totum inane* frustraque animalia et animantes appellari, neque in homine inesse animum vel animam, vimque omnem eam qua vel agamus quid vel sentiamus in omnibus corporibus vivis æquabiliter esse fusam,' etc. (Cicero, Tusc. i. 10.)

We have seen that the most various forms of philosophy are possible upon the foundation of objectivity. Materialism, Idealism, Realism or Individualism, Monism, and all the other systems known to us in later philosophy, grow out of this soil. Their significance and their connection with the common principle of their foundation only appears from the fact that all the different principles set up agree in possessing the character of reality: Matter, Ideas, Forms, or Individuals, spiritualised bodies, etc., agree in having only a *real* existence.

Even the Scepticism of antiquity does not escape from this mental fashion. When it brings together the conclusions of the different dogmatic schools and says, All philosophical wisdom is nought, this does not mean that the reality of things is called in question, but rather, on the contrary, that man should content himself with realities and not dream of reaching a satisfactory explanation or true knowledge of the

reasons for what exists. There is an existing reality, but the thoughts of men are error and delusion. The sceptics urge as a crushing argument against objective dogmatism the incongruities of thought and reality, the relativity of knowledge, and so to a certain extent the share of the knowing subject in cognition. With the same weapon at a later date Hume will take up the struggle and give a decisive bent to the course of modern philosophy.

The objective points of view had been fairly exhausted in the old world; nothing new remained to be deduced from it. At the same time it had failed to afford any satisfaction, and rather left things with the antagonism between different views at its strongest, and most seriously so in the most profound, i.e. the Platonic doctrine, in which scarcely any allowance was made for the essential element in the objective theory of the universe, namely, matter and individualism.

II. With the decay of the old culture a new doctrine announced itself, which was to start from the opposite standpoint and thence attempt to comprehend and explain the universe by a single principle,—the Christian philosophy, namely, which is properly speaking a pure Subjectivism, and might be best characterised as the doctrine of the Absolute Mind.

When I say pure Subjectivism, this must not be understood in the sense in which the idea has been made familiar to us by Descartes. There was no discovery as yet of the individual subject, the thinking Ego, as the source of all knowledge, nor of the great truth which followed on the discovery of the Subject to supplement it, with its necessary complement the Object, nor therefore of the polarity

or relativity of human knowledge. But human thought had begun to turn, with an irresistible and growing motion towards the other pole, in order to win there a firm standing-point from whence it might subdue all things to itself. The world was made subjective in the person of a God outside the world. As formerly the objective outer world, so now this God is recognised as the source of all being and all knowledge. The highest truths are revealed by him to the human mind, the latter must listen to the voices that speak within, he must learn to understand '*Wie spricht ein Geist zum andern Geist.*' Nature is still haunted by the shades of the old gods, and is therefore sinful, subject to evil spirits, and full of snares and temptations. To turn away from the world and its seductions, to retire into one's own heart, penance and asceticism, solitary intercourse with God, become the most serious of duties.

The renunciation of the bright realms of the objective world naturally leads to mystery and mysticism. We see these accordingly co-operating with the first dawn of Christian philosophy to transform and translate the old philosophic doctrine in its own sense; just as at the close of this whole period, when human wisdom had once more exhausted itself in vain, there was a return to the pure primitive spirit of Christianity in Eckhart, Tauler and Suso, proclaiming the direct beholding of all things in God as the source of all enlightenment and the resting on his heart as the sole and highest wisdom.

Among the philosophic systems of antiquity there were only two that were akin to the new doctrine and allowed themselves to be interpreted in its spirit: these were the Platonic Idealism, and the

numerical harmonies of the Pythagoreans. We see accordingly Neo-Platonists and Neo-Pythagoreans rising out of the ruins of the systems which had perished in the universal flood of scepticism and erecting their new constructions upon the plan and in the spirit of the new truth that is being everywhere proclaimed. Enthusiasm, ecstasy, subjective absorption in infinite depths,—things altogether unknown to the old philosophies,—become powerful and strive towards the ideal which the revolutions of time have brought to birth and before which the radiance of earlier ideals is extinguished as stars in the sunlight, towards the unchangeable, eternal unity, towards the primal being, the pure Christ, whom it is only possible to behold, to divine, to feel immediately, and whose existence the dialectic of the reason will in vain endeavour to deduce from the fleeting and illusory world of phenomena. The sensible and the intelligible world are opposed to each other; the latter is alone true; the reason rises in the world of ideas above the changes of time and the differences of space. Everything has proceeded by emanation from the eternally one; but by sin the souls have fallen into the fragmentary condition belonging to life in the material world. The soul therefore has a longing to reunite itself to its source. Schopenhauer is certainly right in pointing out[1] the traces of Oriental, and especially Indian or Egyptian influences in the dogmas of Neo-Platonism which became associated with the Platonic doctrine of ideas. For the first time in Western philosophy, we find idealism proper in Plotinos (Enn. iii. 7. 10), where he says, 'The only space or place of the world

[1] Parerga, i. p. 63.

is the soul,' and 'Time must not be assumed to exist outside the soul.' The soul thus became the creator of all this side of the world, when it passed out of eternity into time. Hence the goal of all desire is to escape from this temporal birth, this metempsychosis, by renunciation of the things of sense, to take refuge in the region where there is no more change or transformation, rising to the pure world of ideas, and thence to unite itself in direct contemplation with God, the world-soul, the eternally Perfect One, to be lost in the abysses of his being and so elude the bondage of imperfect, ever-restless individualism. On the whole, it may be said of Neo-Platonism that it was completely dominated by the new tendency of thought, the opposition of the purely spiritual to everything material; a more pregnant sign of which can hardly be given than the mention that Plotinos professed tò be ashamed of having a body and would never say from what parents he was descended.

The thought peculiar to Hebrew monotheism, 'The world is a creation of the Spirit,' offered a suitable channel into which all the longing and aspiration of the ages poured itself, thus determining the whole mental development of succeeding generations.

Like the ancient materialism, Christian monotheism was now to banish the dæmons and magic terrors of the natural world, which was thus left free, a region no longer closed by fear or prejudice against tranquil investigation or æsthetic contemplation. One nature served the one God, it was the work of his hands. 'It is a notable characteristic,' says A. v. Humboldt, 'of the nature poetry of the Hebrews that by a reflection of the national mono-

theism it always embraces the whole universe in its unity, the life of earth as well as the glittering firmament. It seldom dwells upon particular phenomena, but rejoices in flights concerning great masses. One might say that in the 104th Psalm alone the image of the whole Kosmos is traced out.' A more intimate feeling for nature first became possible in Christianity as men allowed themselves to rejoice in the beauty of nature and to imagine and discern the providence and handiwork of the Deity within it, until at length when the days are fulfilled, the time would come when they no more needed to seek in it for light or knowledge.

The latter was for a long time withheld. The Gods of nature had been driven away from the old world by the advancing knowledge of nature; the conflict between faith and reason had resulted, as it always does, in the discomfiture of faith. The heart of man was burning for a new object of reverence, for a new faith that should lend true value to this fleeting life and bring it into relation with the Eternal. It turned away therefore from the corrupted nature worship, and sought in purity of heart, in recollection of spirit, in aspiration after the Godhead, for truth and illumination. From generation to generation the chasm was allowed to grow and widen between mind and matter, and men learned thus to look upon the whilom one and undivided as two distinct Beings of different natures. The whole of modern philosophy has been perplexed and tormented over the consequences of this antagonism. For the Christian consciousness the reconciliation was effected from the first. Was it not the Spirit which knows and creates and produces all things? Poor Plato, poor Aristotle, say the Fathers, you were

forced laboriously to seek out the architect of the world behind the veil of his works, whereas he reveals himself directly to the soul of every Christian. For a Christian, faith was knowledge and wisdom. To seek for knowledge in nature was to tread the old dark ways, asking wisdom of devils instead of God.

As the life of the mind is hidden and can only be expressed by symbols, i.e. by sensible images which must be interpreted in another spirit, it is easy to understand that the first attempts at a Christian philosophy, which were made by the Gnostics, consisted of allegorical and phantastical creations of mystical ideas compounded out of oriental mysticism and adaptations from Greek philosophy. They all agree in one point, that an invisible, inconceivable, incomprehensible, immutable, primæval Being is the cause and foundation of all things. This primal monad (*μόνας ἀγγέννητος*) has given birth to all things. He is the Bythos or Abyssus by whom the consubstantial Silence (*σιγή*) was impregnated. Hence proceeded Knowledge (*νοῦς*) and Truth, and these four compose the Pythagorean *τετρακτύς*, the root of all things, etc. Metaphysical numbers, æons, emanations, beings intermediate between God and the world, but all of a purely spiritual nature, play a great part. And we see clearly how a spiritual mythology might have been developed, from the unity of the Absolute Spirit, at the root of Christianity, which would have differed radically from the ancient one by its allegorical and mystical form as distinguished from the objective and personal character of the former. Schopenhauer observes with justice[1] that the attempt of the Gnostics to introduce middle

[1] Parerga, i. 65.

beings like the Pleroma, the Æons, the Hyle or Sophia, between the spiritual first cause and the world was analogous to that made afterwards by Descartes to attenuate the contradictions which the assumption of connection and reciprocal influence between a material and immaterial substance carried with it, such as his assumption of 'animal spirits, nerve-æther,' etc. Both disguise what they cannot explain.

The sound instinct of the Catholic Church rose in resistance to this esoteric Gnostic mysticism. The Apologists and Fathers of the Church sought to preserve in its purity the simple Christian doctrine, as containing all wisdom in itself and transcending the vain and subtle imaginations of the human wisdom of ancient philosophy. God is a supernatural being, incomprehensible to the reason. What we know *of* God we only know *from* him, and with this, which is the true Gnosis, we should rest content. There is but one God from whom all things have proceeded and by whom all were created. We can understand how in that age of passionate enthusiasm, young ardour, and unbroken energy, Tertullian's faith should have exclaimed, in scorn of reason and all the wisdom of philosophy, 'Credo quia absurdum est: certum est, quia impossibile est!'

But reason could not long abjure her rights, and the very fact that the Christian apologists were obliged to represent the false gods of antiquity as absurd and irreligious, compelled them to have recourse to grounds of reason to make their convictions accessible to others. Thus the views of the old philosophers, and especially of Plato, were referred to to show in how many points they approached to the Christian doctrine. They had striven by the

light of reason towards that which God had made known by supernatural revelation to Christians. They had as it were stood in the outer court of the temple. But everywhere the opposition between the mind and body was insisted upon as the most important argument. Just as the human mind is one and rules the body with its many members, so there can be but one God to rule the world. 'Deus autem qui est æterna mens ex omni utique parte perfectæ consummatæque virtutis est... Deus vero, si perfectus est, ut esse debet, non potest esse nisi unus.' (Lact. Inst. i. 3.)

It has often been said, that the great idea of Descartes upon which modern philosophy is founded, is to be met with in St. Augustine, who appeals to the certainty of self-consciousness in refutation of scepticism. 'Tu qui vis te nosse, scis esse te? Scio. Unde scis? Nescio. Moveri te scis? Nescio. Cogitare te scis? Scio.' (Sol. ii. 1.) And again: 'Omnis qui se dubitantem intelligit, verum intelligit, et de hac re quam intelligit certus est. Omnis igitur qui utrum sit veritas dubitet, in se ipso habet verum unde non dubitet, nec illum verum nisi veritate verum est. Non itaque oportet eum de veritate dubitare qui potuit undecumque dubitare.' (De Vera Rel. 73.) Doubt may prevail as to whether our souls are fire or air, but it is impossible for men to doubt that they feel, will, think and judge, for doubt itself presupposes all this. The soul has no certain knowledge except that of itself: 'Nihil enim tam novit mens quam id quod sibi præsto est, nec menti magis quidquam præsto est quam ipsa sibi.' (De Trinit. xiv. 7.) We can only *believe* in the existence of external bodies, and we depend in the same way upon belief as to the temper, character, and will of

other men. What we know, we also believe; belief itself is a way towards knowledge.

There are certainly important and remarkable points of agreement between these statements and the fundamental principle and reasoning of Descartes. It may be said that Augustine, who so emphatically indicated the direct certitude of self-consciousness, and recognised it as the foundation whence all other certainty must be derived, is the real ancestor of Christian philosophy and Christian Scholasticism, and all that has sprung from these roots. He stands thus in opposition to the whole of ancient philosophy, in which subjectivity was synonymous with insecurity and deception, and which accordingly strove with all its might towards objectivity or being.

But we must not overlook the vast divergences between the Augustinian and Cartesian doctrines, if we are to form a correct estimate of the course of philosophical development. Augustine uses his own consciousness only as a step from which to raise himself up to eternal truth, the certainty of God's existence. 'You doubt?' they both begin; 'therefore you think. Your thought and consciousness are therefore certain.' But now Augustine continues: As certainly as you live and think, so certainly God lives and is a Single Being, a spirit like yourself. Descartes takes the reverse way and says: As certainly as God lives and is eternal truth, so certainly is my thought of an external world not delusion.

The difference is that mediæval philosophy drew from the world the proof of the existence of God; Descartes deduced from the existence of God the certainty of the existence of the world. This indeed is certainly his weakest point, but we see already

how with him philosophy which had hitherto believed itself to be the doctrine of the Absolute Intelligence, was to become the doctrine of the *Subjective Intelligence.*

The knowledge of self was first derived from the knowledge of God. This is perhaps the most important and strongest point of contrast between the age of Christendom and the preceding ancient and subsequent modern periods. In brief and notable words Augustine expresses this thought, as at once the rule and the aim of all spiritual research: 'Deum et animam scire cupio. Nihilne plus? Nihil omnino.' (Soliloq. i. 7.) 'Deus semper idem, noverim me, noverim te.' (Ib. ii. 4.) But human reason must recognise a something higher than itself, seeing that it is changeable, perishable, and subject to many errors. This supreme, eternal, unchangeable truth is God, and can only be bestowed by him on man. Theology and Theosophy take the place of the ancient ontology. All the incomprehensibility of the world and our own nature is thrown into the shade by the incomprehensibility of the Godhead, which embraces and includes all that is, but cannot itself be determined or conditioned by any name, number, space or time, by any knowledge under any attribute. And these questions as to the nature of the human mind—which by its union with the body is confined within the limits of space and time, while at the same time it participates in the nature of the unconditioned eternal Deity—assumed for the first time a transcendental character. As the one God is present everywhere throughout the world, so the one soul is present indivisibly in every part of the body. It is therefore a special spiritual substance, which has nothing in common with the corporeal nature. Questions

as to the nature of time, space, number, divisibility and the like, had now become inevitable; their importance and significance only revealed themselves in the course of controversy.

But other contradictions of the highest importance, directly connected with the fundamental principle of monotheism or the Absolute Intelligence, presented themselves as well. As ancient objectivism had a decided tendency towards materialism as the principle of unity and intelligibility, treating individualism as the principle of separation and incomprehensibility, so Christian monotheism leads conversely towards the opposite pole, and takes as its standpoint the unity of the mind, from which and by which all things are created, governed and interpreted, while the foreign and incomprehensible element lies in the manifold multiplicity, divisibility, and passivity of matter. The scholastic explanation is thus strictly logical in treating time and space, in which all things material are presented, as the real *principia individuationis*. Still more startling is the contrast between the eternal, unchangeable All Spirit, or God, and the individual spirits which are created and called into being by him: although, in accordance with the principle 'operari sequitur esse,' they cannot be conceived to confront with independent energy the abyss of Omnipotence and creative power of the One. This difficulty becomes of the utmost importance because the cardinal question of practical Christianity deals with the responsibility of mankind, which presupposes freedom and independent power. Antiquity might assert the absolute determination of human action by conditions[1]. Velleius Paterculus might make the

[1] Thus, according to Aristotle, Sokrates said Οὐκ ἐφ' ἡμῖν γενέσθαι τὸ σπουδαίους εἶναι ἢ φαύλους. (Eth. mag. i. 9.)

divine nature consist in its necessity, as when he says of Cato: 'Homo virtuti consimillimus, et per omnia genio diis quam hominibus proprior: qui nunquam recte fecit, ut facere videretur, sed *quia aliter facere non poterat.*' (ii. 35.) But in a yet higher degree, whether by his omnipotence or the irresistibleness of his working, the Christian God must still more inevitably have put an end to all possibilities of individual liberty. The finest minds accordingly begin at once to torment themselves over this problem, how to reconcile the divine foreknowledge with the free self-determination of the human agent. The logical and candid ones, like Augustine, Calvin and Luther, arrive at the impossibility of human freedom. While the two first hold fast to this, that a great part of the human race 'prædestinati sunt in æternum ignem ire cum diabolo,' the latter speaks without disguise: 'Concessa præscientia et omnipotentia, sequitur naturaliter, irrefragabili consequentia, nos per nos ipsos non esse factos, nec vivere, nec agere quidquam, sed per illius omnipotentiam.' (De Servo Arbitrio.) And in another place: 'We do not exist by free-will, but of necessity; we ourselves do not act, but God acts in us in accordance with his eternal, infallible, unalterable wisdom; inevitable logic forces us to this confession.'

In other words, Christian monotheism has an irresistible tendency towards Pantheism; in both the individual existence is completely swallowed in the absolute mind. There is therefore no greater contrast than that between the ancient polytheism and the pantheism of Vanini, Giordano Bruno, and Spinoza, and only a complete misconception of their nature could lead to an affiliation or even comparison of the two. In the first the individual will breaks through

everywhere; in the latter it is wholly eliminated. The scientific knowledge of nature, which only becomes possible by the denial of the first, had to wage a bitter war against it in antiquity; the latter was accepted and invoked in the renaissance of natural science, as the fundamental principle of the new theory of the universe which had become necessary. According to antiquity the gods displayed their power by breaking through the laws of causation, as when Jupiter thunders and lightens from a cloudless sky: Pantheism is the definite expression of a complete natural order, the completed interpenetration of mind and body, God and the world. The transition was naturally furnished by monotheism, the belief in the Absolute Intelligence, the creator and ruler of the world, who has ordered all things well and wisely, whose thoughts we think as we learn to know the laws of nature, its classes and kinds; and whose power reveals itself therefore not merely in the mighty and terrible convulsions of nature,—though these, together with the miraculous contraventions of the natural order, bear witness to him too,—but also most profoundly and most purely in the harmonies of things, in the marvellous structure of every living thing, by the side of which all human art and skill seems the coarsest bungling.

It is therefore not surprising that we should be encountered at the very beginning of the Scholastic philosophy by an attempt to reconcile Pantheism and Monotheism, in the writings, namely, of Johannes Scotus Erigena, who flourished in the ninth century, and who received his impulse from the pseudo-Dionysius Areopagita, whose works he translated into Latin, so procuring for them considerable in-

fluence on the philosophy of the West. In Dionysius, who was also a favourite authority with the mediæval mystics, and had himself been much under the influence of Neo-Platonism, attention was for the first time turned to the *formation* of ideas and logical forms, a subject the study of which was destined to elicit in the future of Scholasticism so much intellectual acuteness and so much futile wrangling. According to him there is an affirmative theology (καταφατική) and a negative, *abstract* one (ἀποφατική): the first descends from God to created things, which multiply and specialise as we proceed (in which he is approaching Aristotle); the latter pursues the opposite course, and by continuously *thinking away*, attains to higher and higher abstractions, till at last it reaches the One which embraces all things in itself, being and not-being together, the Un-named, of which nothing may be predicated, the highest knowledge of which consists in negations and is thus the ignorance of mysticism.

In Johannes Scotus, who carried out the ideas of Dionysius with closer logic and profounder genius, the difficulty of reconciling the existence of sin and evil with the divine beneficence presents itself as a source of tormenting doubts, and with infinite pains and ingenuity he seeks to lessen the difficulty by treating evil and sin as properly nothing:—'penitus incausale et insubstantiale!' The other expedient—that God created men *free*—has been shown by Schopenhauer in many passages[1] to be a case of 'wooden iron,' since liberty and createdness are essentially irreconcilable notions.

For the rest, we find in this remarkable man's

[1] E. g. Parerga, i. 67.

writings the germ of all that Scholasticism was subsequently to set forth at large, and which was to become the subject of the most far-reaching speculation and the most embittered controversy. It is interesting to observe here the first rise of these questions, and to see how at that date views were allowed expression as harmless which the authority of the Church was to condemn and anathematise a little later. The fact was that in those days of living faith neither the authors nor the Church had any conception of the danger of these views and their subsequent destructive effect.

Nothing could show more plainly the naïve certainty of his belief that all truth was given in the Christian religion, than his frankly expressed conviction that the true religion was identical with true philosophy; that accordingly true reason and authority could never contradict each other, and that whenever the authority of the Fathers, who had themselves been guided by reason only, seemed to conflict with the verdict of true reason, the latter was to be followed. 'Auctoritas ex vera ratione processit, ratio vero nequaquam ex auctoritate.' The whole world has proceeded from God; his beholding is an act, his act a contemplation; God is the substance of all things. Man sums up all preceding existence, spiritual and corporeal:—he is a mikrokosm.

The conflict between ideas and things forms the real substance of the debates and investigations of Scholasticism; at the same time the Middle Ages were called upon to serve as a period of transition between ancient and modern philosophy, and to prepare the minds of men for the momentous thought, which is even yet hardly understood, that there is no reality precisely corresponding to the notions of men, and

that what constitutes our reality is simply our own mental representations.

The way could only be prepared for this truth by a philosophy which took its start from the absolute intelligence. Aristotle's doctrine of the Categories acquired the utmost importance in Scholasticism: the Categories are properly kinds of affirmation. Lange[1] observes that instead of seeking for the highest wisdom behind the Categories, the fact should have been recognised 'that Aristotle in establishing them was endeavouring to lay down how many principal ways there were of saying about anything what it was, and that he was misled by the authority of language into confusing kinds of propositions with kinds of being.' He then continues: 'Without entering here into the question how far he may have been justified in treating forms of thought and forms of being as parallel, and in assuming a more or less exact correspondence between the two, it must be observed that the confusion of objective and subjective elements in our conception of things, which became in its crassest form the very foundation of Scholasticism, is among the most characteristic traits of Aristotelian thought. The confusion was not introduced into philosophy by him, on the contrary, he it was who *began* to distinguish between what the unscientific consciousness was always inclined to identify. But Aristotle did not get beyond the very imperfect beginnings of such a distinction; and exactly those elements in his Logic and Metaphysics, which in consequence of this were most perverse, were seized upon by the untutored nations of the West as the corner-stone of wisdom, just because they

[1] Geschichte des Materialismus, i. 159.

were most congenial to their undeveloped understandings.'

Truth and error are most strangely intermingled in this account, and the most important problems and achievements of philosophy are altogether ignored or treated as incidental.

Aristotle did not distinguish between the objective and subjective elements of knowledge, because this distinction is the ripest fruit of modern philosophy; because the whole of ancient philosophy was essentially objective; and because while the distinction between sensible perception and thought (phenomena and noumena) had been established, that between thought and being was still unknown! On the contrary, in the eyes of all antiquity the points at which thought was held to aim was (and could not conceivably have been anything but) actual. Being (τὸ ὄντως ὄν). Logic, dialectic, and the rest were only the sails and mill-stones by the help of which the pure flour of reality was to be extracted unadulterated from the grain.

Philosophy therefore had to pass through a great convulsion before the question of the relation of thought to being could be stated; all preceding problems had to assume another aspect, as it were turning their shadow side into the light. This great revolution was rendered possible by the Christian philosophy. Hence the interest and promise of the question, which provokes Lange's shrugs of compassion at the outset of Scholasticism: whether the five notions[1] which Porphyry extracted from the logical writings of Aristotle, and his ten Categories, were names, that is to say forms of thought, or real

[1] Genus, differentia, species, proprium, accidens.

entities. The whole question of the Universals, with which the Middle Ages were to occupy themselves so much, connected itself with this problem. Thus while antiquity, at its height, could only discern true copies of things in the Platonic ideas, it was reserved for the Middle Ages to consider the nature of thought in itself,—for the thoughts of God were creative too,—and to formulate the problem 'How do we pass from thought to being?' After which the final question becomes possible, 'What is the relation of thought to being?'—which has been answered by Kant. Christian philosophy is thus an important and indispensable link in the development of human thought.

We cannot therefore agree with Lange in seeing only a sign of 'the barbarism of the western nations' in the disciple and follower of Alcuin, Fredegisus, and his treatise 'De Nihilo et Tenebris,' when he argues that Nothing cannot be a pure negation, but must indicate something real, as darkness does, because every name means something, and therefore Nothing itself must have some kind of being, which is further confirmed by the suggestion that Nothing was the material out of which God created the world. We shall rather see and welcome in this the first creative essays of a healthy vital impulse which *compares* ideas and things, and can therefore proceed to *distinguish* them. On this untrodden path then Erigena proceeded boldly forward, explaining 'darkness,' 'silence,' and the rest as conceptions of the thinking mind. Not less significant is his contention that the *absentia* of a thing and the thing itself are generically alike, as light and darkness, sound and silence. Aristotle had touched upon this when he distinguished the ἀπόφασις or logical negation from the

στέρησις or real negation. Here the problem of the relation between thought and being obtrudes itself already; and this important question, which here only appears in the form of an *aperçu*, will meet us again at the period of its approaching solution, in the important work of Kant, 'Versuch den Begriff der negativen Grössen in die Weltweisheit einzuführen. 1763.'

A different hemisphere from that of ancient philosophy has been reached when we find ourselves surrounded by such questions as, 'Nothing must be something, because every word must mean something;' or 'Darkness and Silence are negative in thought; there must be some real negation answering to them.' We are here at the antipodes of the state of mind which accepted as the most positive of certainties that there must be something *in the mind*, and that no other starting-point could lead towards the world of things and its relations. The new generation was already accustomed to imagine the creative world-spirit surrounded by heavenly beings of a purely spiritual nature, with Seraphim and Cherubim, Thrones, Dominions, Virtues, Powers and Principalities, Angels and Archangels. And as early as Claudianus Mamertus (ob. 477) metaphysical enquiries began as to the immaterial nature of the soul, to which quantity, in the way of extension, cannot be attributed; whose only magnitude is virtue and wisdom, whose motion is only in time not space, and so forth, in confutation of the antique materialism of Tertullian's views.

But the most important conception which mediæval philosophy was to originate and bequeath to modern times, was that of the *concept* (conceptus) itself; something purely intellectual, an object

born of the mind itself, which nevertheless has marvellous unexplained relations to reality, the full elucidation of which remained for a still remote future. To discover these relations began henceforward to count as the chief business of philosophy. All the controversies of Scholasticism turn upon the Universals; these universals are represented in modern philosophy by concepts, or general ideas.

These considerations were aroused, as has been shown, by the doctrines of Plato and Aristotle. The Pantheistic turn of Scotus Erigena, for whom all things proceed from the Deity as the true substance, and strive to be reabsorbed again in him, who held the highest abstractions to be the highest truths, who understood by the mystical Nothing the supreme superessential, incomprehensible nature of God himself, whilst on the other hand he makes God the sum of all beings and all realities—this Pantheistic bent prevented the antagonism from becoming sensible as yet: it is needless to add that according to him the Universals exist *before* the things (i.e. in God) as well as *in* things.

The growing familiarity with the works of Aristotle —so highly revered as an authority—lent to Scholasticism its peculiar character. The dialectic method, of starting from ideas and thence, by continued *pro* and *contra*, deducing true conclusions, was the favourite. It was congenial to an epoch which believed knowledge could only be derived from the mind, and wholly despised nature, reality, and experience.

It is unquestionable that the discussion of the contradictions between Plato and Aristotle, in the Christian philosophy, helped the latter to grasp its own

problem with a degree of unity and comprehensiveness which it could not otherwise have attained. The incurable pluralism of Greek philosophy was really got rid of by Christianity. Instead of the Aristotelian substances, *Substance* was conceived, its attributes and accidents were investigated, and the idea was actually so boldly generalised as to include within itself the worlds of matter and spirit. The Pluralism of the Platonic ideas was set aside when for the first time men found themselves in a position to realise to themselves the growth of ideas *within* the human soul,—a clue for all future philosophy! From this point of view a passage from Henricus of Auxerre (in the 9th century) is of great interest, as it contains a kind of theory as to the origin of reason, and seems partly, though of course imperfectly, to forestall some of the views of Locke and Leibniz: 'Sciendum autem quia propria nomina sunt innumerabilia ad quæ cognoscenda intellectus nullus seu memoria sufficit, hæc ergo omnia coartata species comprehendit et facit primum gradum qui latissimus est, scilicet hominem, equum, leonem et species hujusmodi omnes continet; sed quia hæc rursus erant innumerabilia et incomprehensibilia, alter factus est gradus angustior jam, qui constat in genere, quod est animal, surculus et lapis: iterum hæc genera, in unum coacta nomen, tertium fecerunt gradum arctissimum jam et angustissimum, utpote qui uno nomine solum constet quod est usia[1].' This is genuine Nominalism; but what a change in the standpoint compared with that of Aristotle and the ancients! The latter saw the Universal in things, and cared for nothing else; the human soul had only

[1] Ueberweg, Grundriss der Geschichte der Philosophie, ii. p. 125.

a special power of perceiving the Universal; but here we find Christian philosophy, unconcerned about the nature of actual things,—were they not all the work of God?—boldly maintaining that the soul itself originates an orderly course of intuition and designation. The Christian belief in an immortal, independent, divine soul, was also connected with the avowed absolute subjectivity which permitted the development of extreme nominalism and made it possible to say: 'These so-called Universals or kinds, to which you attribute true reality, are only my own creations, or in still harsher form, are the sounds caused by my own mouth, *flatus vocis*.' A passage quoted by Cousin[1] from the Commentary on Porphyry attributed to Rabanus Maurus is characteristic in this respect; the object of thought is expressly distinguished from the actual things which alone have real existence: 'Genus est quod prædicatur. *Res enim non prædicatur.* Quod hoc modo probant: si res prædicatur, res dicitur; si res dicitur, res enuntiatur, res profertur; sed res proferri non potest; nihil enim profertur nisi *vox*, neque enim aliud est prolatio quam aëris plectro linguæ percussio.' It is true the expression is crude, but the thoughtful reader will detect in it the implication of a great truth, which was wholly unknown to the ancients.

The victory which the doctrine of the Realists—i. e. those who attributed true reality to Kinds, Universals, or (Platonic) Ideas—gained by the help of ecclesiastical authority on the occasion of the public decision of the controversy at the Council of Soissons (1092), when the representative of Nominalism was compelled to recant, was owing no doubt to a foreboding of the

[1] Ueberweg, l. c. p. 126.

relationship between Nominalism, logically carried out, and Naturalism or Materialism. The Church felt that its own strength lay in the rigid upholding of the pure spiritual element. The Nominalist doctrine had already shown itself dangerous to the first and highest doctrine, the mystery of the Trinity. If only single beings possess reality, tritheism becomes unavoidable, and this point excited universal notice. Every age tests the truth of a new doctrine by applying it to that which it has most at heart; in the ages of faith this was the Christian doctrine, as in our own day we ask whether the tendency of Darwinism is aristocratic (as Haeckel assures us), or social-democratic (as Virchow inclines to think). The arguments which Anselm of Canterbury brought to bear against nominalism all turn upon the impropriety of judging spiritual natures by the coarse standards of ordinary sense. He ridicules those dialecticians who think that words, the *flatus vocis*, exhaust the nature of the universal substances, who imagine that colour must be a body and wisdom a soul, who, wholly swayed by their imagination, can only believe in the existence of that which is immediately before their eyes. He calls them dialectic heretics, pointing thereby to the discord which was beginning to separate reason and dogma, while earlier times had remained unshaken in the belief that revelation was completely in harmony with reason and could be demonstrated by the latter. His *Credo ut intelligam* thus assumes a peculiar character: it may be supplemented: I believe things transcending my powers of comprehension, but which show me the way by which I may attain to true knowledge. The existence of Universals as pure spiritual entities is lighted up by the mysteries of faith, for the comprehension of which they are indeed

nècessary: 'Qui enim nondum intelligit quomodo plures homines in specie sint homo unus, qualiter in illa secretissima natura comprehendet, quomodo plures personæ, quarum singula quæque est perfectus Deus, sint Deus unus? et cujus mens obscura est ad discernendum inter equum suum et colorem ejus, qualiter discernet inter unum Deum et plures rationes; denique qui non potest intelligere aliud esse hominem nisi individuum, nullatenus intelliget hominem nisi humanam personam.' (De Fide Trin. c. 2.)

The very fact that in the Middle Ages those whom we now call Idealists were called Realists, is significant and instructive. It shows the assumption from which opinion started. The Spiritual was taken for granted, and from thence men proceeded towards reality, asking: Are these Beings conceived by the mind, these Universals, actual things? For Plato and Aristotle they were only reflections, εἴδη, ἰδέαι, in the human soul, derived either from memory of a former state or the direct contemplation of real beings in th ›resent. The one view is objective, the other subjective.

If the doctrine of Absolute Intelligence forms the real substance of mediæval philosophy, the summit of its unimpaired existence was reached in the well-known cosmological and ontological proof of the existence of a deity furnished by this same Anselm of Canterbury in his Monologium and Proslogium; which, although their weak points were indicated in the author's lifetime by the monk Gaunilo, yet stood for centuries, like citadels, commanding the whole realm of philosophy, until at last the mine kindled by Kant exploded and blew them into the air. The assumption underlying this demonstration is that it

is possible to proceed by dialectic inferences from thought to being. We think the good, the lofty, the true, therefore these universals have an existence independent of things. But we must then also necessarily think a supreme good, a supreme truth, a supreme justice, and this is God, the absolute Being: all individual existences are conditioned, and prove by the very fact that there must exist an ultimate source, a *causa prima*, with nothing superior to itself. This Absolute Intelligence has created the world, and continues to preserve it in existence: all things existed first in his thoughts, before they attained reality. In individuals nothing is just, good, or true, except in so far as it participates in the absolute Justice, Goodness, and Truth. This is the cosmological proof, which reasons from our relative thought to the Absolute. The ontological proof, on the contrary, derives its conclusion from the definition of the idea itself. It is possible to think of a Greatest, a Highest, a Necessary Being: therefore this must actually exist. For if it did not, it would be only *in intellectu*, it would therefore not be really Greatest, Highest,—id quod non cogitari potest non esse. It is the same proof as that which will meet us again under many disguises in Descartes, Spinoza, and Leibniz, whose dependence upon mediæval thought is shown in nothing more clearly than in this. The ens realissimum, necessarium, the causa sui, id quod non cogitari potest nisi existens, the causa prima, all trace their origin to the scholastic argument according to which reality, like any other predicate, is included in the idea of substance, and then by analytical judgment discovered to belong to it of right. No doubt was felt at this period that necessary links of connection must lead from thought, mind, and idea to reality;

the impossibility of this was only proved to the world by Kant.

The first attempts at reconciliation between the extremes of Nominalism and Realism were made in the twelfth century, by Abelard, so famous for his eloquence and his ill-fated love. His keen intellect was the first to discern the important distinction between words, as mere sounds, and the conceptual content corresponding to them. Rémusat describes his attitude as follows[1]: 'Ce n'est pas le mot, la voix, mais le discours, sermo, c'est à dire l'expression du mot qui est attribuable à divers, et quoique les discours soient des mots, ce ne sont pas les *mots* mais les *discours* (meaning clearly the sense of the words) qui sont universels. Quant aux choses, s'il était vrai qu'une chose pût s'affirmer de plusieurs choses, une seule et même chose se retrouverait également dans plusieurs, ce qui répugne.' He had thus a clearer insight into the nature of language than any of his predecessors, while he agreed with John of Salisbury (Metal. ii. 17) in thinking, *rem de re prædicari* monstrum esse. The essence of his doctrine is Conceptualism, and it seems as if the important determination of the meaning attached to *conceptus*, notion or idea, was also due to him. It was only in harmony with the natural course of things, and of mediæval thought, that he should first locate this *conceptus mentis* in the Spirit of the Trinity, where its effects must be creative, and so turn to the universalia *in* rebus. If it is, as we believe, one of the most important discoveries of modern philosophy that all human thought takes place by means of ideas, that these are purely mental objects, which however have

[1] Abélard, ii. 105 (ap. Ueberweg, ii. 152).

no other matter or content than what is derived from the objective world of sense,—it will be easy to estimate the importance and the fruitfulness of this discovery of Abelard's. In the same way as he distinguished the word as sound from the idea, he distinguished the latter also from the things to which it refers, and gives it thus a really intermediate place between mind and fact, while he also recognises in words a significatio intellectualis and realis, and says of the definition 'nihil aliud est definitum, nisi *declaratum secundum significationem vocabulum.*' The progress is undeniable from antiquity which sought to translate things into ideas, to scholasticism which translates ideas direct into things. For the rest, scepticism was already astir in Abelard's mind, as is shown by his work 'Sic et Non,' in which he brings together all the contradictory propositions which have emanated from authority, and by the utterance which is bold for his age: 'Dubitando ad inquisitionem venimus, inquirendo veritatem percipimus.' His doctrines were condemned in two synods.

The great schoolmen of the next age, among whom Albert of Bollstädt (Albertus Magnus) and Thomas Aquinas stand out pre-eminent in comprehensive learning and acuteness, accepted the former versions of the problem of the Universals, and admitted their existence in a threefold sense, as *ante rem* in the mind of the Creator, as *in re*, according to the Aristotelian conception, and also as *post rem* as ideas arrived at by abstraction. To Thomas Aquinas the *universale in re* is the quiddity, or substantial form, which is abstracted by the reason, and is distinguished from the accidental forms or non-essential qualities. For the rest, these great thinkers are not unaware of the incompatibility between reason and the ecclesiastical

dogmas. Albert the Great, whose researches were directed towards the hitherto proscribed or despised natural sciences, passed beyond the limits of the credo ut intelligam when he recognised that there were dogmas inaccessible to the natural light of reason, and therefore necessarily objects of faith. He distinguished between philosophic and theological truth, demanding that the former should be considered philosophically, and professing in matters of religion to prefer the authority of Augustine to that of Aristotle, while in matters of natural science Aristotle was to be believed in preference. The antagonism appears still more sharply in St. Thomas of Aquin, who confesses most of the dogmas of the Church to be unattainable by natural reason: this can at most prove that they are not contrary to reason, it can never reach them by its own unaided principles and can therefore not demonstrate their truth. On that very account they are matter of revelation, and faith becomes a merit, a virtue, an affair of will rather than of intelligence. Natural theology, as set forth in Aristotle, is, as it were, only a preparation for the higher knowledge of Christianity, and in the same way the light of nature is a handmaid to faith. Here we find demarcations and adjustments where a little later irreconcilable antagonism will present itself.

The contrast between the general and the particular, the one and many, reason and sense, which lies at the root of all knowledge, is also at the bottom of this problem of the Universals. The ancients themselves knew that there could be no science of particulars, nor therefore of affections of sense, and the fact was clearly and precisely enuntiated by both Plato and Aristotle. Each spoke only from his own

standpoint, and under the influence of the prevailing objectivism. Plato attributed reality to ideas external to the phenomena, Aristotle to forms within the phenomena. This was the irreducible remainder of ancient philosophy; what is posited as *real* cannot be reduced to other elements, it remains individual, and pluralism is the result. The God who orders the world, the mover of all things that move, is a mere expedient.

It remains to be seen what answer to the question regarding the individual was given by the doctrine of Absolute Intelligence, or Christian philosophy. The most logical reply would have been, as has been said already, that the individual should be absorbed in the former, i. e. Pantheism. But the profound ethical spirit of Christianity was opposed to this; morality is only possible with self-determination, i. e. individualism. The individual, or rather the self-subsistence of separate things by and outside the general, universal spirit, is therefore what has to be explained, and of this problem Scholasticism gives various solutions.

1. St. Thomas, inspired by Aristotle and his commentator Avicenna, placed the principium individuationis in matter. It is only by this that species turn to individual beings, and assume material existence in a determinate place and time, *hic et nunc*. Matter is always undetermined, and has only a quantitas determinata, it is the substratum which receives the form, the ὑποκείμενον or subject. There are, it is true, also immaterial forms, formæ separatæ, God, angels, human souls, but everything perceivable by sense is a form inseparably bound up with matter. These views include the antithesis of matter and mind, the recognition of matter as the universal substance with

only quantitative differences, space and time as their essential conditions, form inseparable from matter—all rays of light pointing to the path Descartes and Kant are to follow in the future. In Aquinas too we find ideas as to the nature of human knowledge that seem to belong to a later age than his. Human knowledge is only possible by the action of the objects on the knowing soul: one who is deprived of a sense, like those born blind, is without the corresponding concepts; the senses cannot grasp the nature of things, but only their external accidents, and yet the human intellect requires the phantasms of them, which it renders intelligible by its power of abstraction. His criticism on the Platonists is as striking as it is profound and far-sighted: 'Intellectus humani, qui est conjunctus corporis, proprium objectum est quidditas, sive natura in materia corporali existens, et per hujusmodi naturas visibilium rerum etiam in invisibilium rerum aliqualem cognitionem ascendit, de ratione autem hujus naturæ est quod non est absque materia corporali. Si proprium objectum nostri intellectus esset forma separata, vel si formæ rerum sensibilium subsisterent non in particularibus secundum Platonicos, non oporteret, quod intellectus noster semper intelligendo converteret ad phantasmata.' (Sum. Theol. i. qu. 84.)

2. In contradistinction to St. Thomas, Duns Scotus places the essence of Individualism in form, rather than matter. All beings except God have a material, and a form, which is however indefinitely more exalted in the case of spiritual than of corporeal beings. But from out of this universal existence, the particular existence of individual beings constitutes itself by the accession of positive conditions, so that the individual nature, the *hæcceitas*, is superadded to the

universal nature, the quidditas. We are generally accustomed to regard these abstractions as the acme of Scholastical absurdity. But it should be remembered that this last expression means no more than what Aristotle had maintained against Plato, namely, that nothing really exists except the individual, τόδε τι. Duns Scotus has done nothing but carry the reality of Aristotle into the higher region of ideas, which is surely an important progress: where else can it belong? When Kant comes to explain the case as to this hæcceitas, will he show it to be something real? The analysis of the idea as such and its accurate investigation are due to Scholasticism; and without this careful anatomy of mental processes modern philosophy would never have become possible. Even Lange does not hesitate to recognise a progress even in the subtleties of the scholastic (Byzantine) logic[1]: 'Any one who at the present day is still (!) inclined to identify grammar and logic, would at least derive some profit from the logicians of that century, for the latter tried seriously to make a logical analysis of the whole of Grammar, in the course of which they succeeded indeed in creating a new language, the horrors of which were held to be past exaggeration by the Humanists. . . . But the fundamental intention of all this diligence was perfectly serious, and sooner or later the whole problem (of language and thought) will have to be reconsidered, though it may be with a very different bearing and purpose.'

Duns Scotus was an acute but very hierarchically-minded man. He believed himself to be serving the authority of the Church by restricting the rights of

[1] Geschichte des Materialismus, i. p. 177.

reason even more than his predecessors, and declaring the truths which had formerly been recognised as the subject of natural theology, such as the creation of the world and the immortality of the soul, to be incapable of proof. Knowledge according to his view has nothing to do with faith; theology has more practical than theoretical significance, the will of God[1] is the only cause of the truths of faith; the duty of man is to believe, i.e. to submit willingly to the authority of the Church. The will of man is not dependent on his knowledge, but he is able to determine it without rational grounds: voluntas est superior intellectu.

The breach between faith and knowledge was completed by the Franciscan William of Occam (d. 1347), the restorer of Nominalism. According to him there is no truth of theology, not even the existence of God, that can be proved by rational arguments. He throws a new light upon the enquiry into the nature of Universals and of the individual. *Things* are allowed once more to come within the field of vision. In the golden age of the Christian philosophy the Absolute Intelligence, God, is the source of all truth, the quintessence of all reality, the only true *postulate* needed for knowledge, and leading necessarily thereto. Now however the long-despised and disregarded object again rises on the horizon in all its enigmatic

[1] According to St. Thomas Aquinas, God commands what is good, because it is good: according to Duns Scotus, good is good because God wills it. The domain of reason grows more and more restricted. We shall see how, in the next period, its claims grew in the same matters in an opposite direction. According to Descartes, a mathematical proposition is true (an æterna veritas) because God so wills; according to Spinoza, it is an idea of God because it is in accordance with reason.

obscurity, and calls for a solution, which antiquity was unable to give notwithstanding its exclusive attention to this aspect, and which theological wisdom, by restricting itself to the domain of faith, could no longer even attempt. But the return to Nominalism is by no means a simple resumption of the Aristotelian standpoint. In the interval the whole nature of the question had undergone a change corresponding to the intellectual work accomplished, and though the aspect was the same as from the earlier standpoint, the outlook was from a higher elevation commanding a wider prospect. Gradually, and perhaps still confusedly and unconsciously, the true objects of the mind, ideas, had been substituted for the Aristotelian objects.

Occam hits the weak point of the Platonic doctrine of ideas, its pluralism. If we make the Universals into real things, existing outside our thought, they turn into single things, individuals. And it is just as impossible to attribute separate existence to the Universals within the things, for this would also be multiplying them. It is we ourselves, our abstracting intelligence, that so surveys the really existing single things that the common element belonging to them detaches itself and is conceived and comprehended by the mind, only however as an Idea, conceptus mentis; except in the mind, this idea has no existence save as a word or other conventional sign.

Thus, according to Occam, the principle of individuation resides in the individual itself, which exists independently and must be accepted as a preliminary part of the problem to be solved. The individuals alone are truly real, 'quælibet res ex eo ipso quod est, est *hæc* res.' We think and know

by means of universals, but it by no means follows that they therefore possess reality. The real individuals are represented in due order and connection by the corresponding ideas: these ideas with their verbal equivalents are called termini, and hence the adherents of Occam were rightly called Terminists, to distinguish them from the extreme Nominalists, who saw in Universals *mera nomina* or arbitrary signs[1]. The change may be hailed as the first dawning ray of modern philosophy, since here for the first time the relation of the subject to the object is conceived as the starting-point and fundamental principle of knowledge. For though the termini as such exist only in the percipient mind, they are not arbitrary, like conventional signs or sounds, but they arise by natural necessity out of the intercourse of the mind with things, i. e. as an effect of the latter. Word, idea, and thing seem for the first time to be sharply distinguished and their interdependence shown; the reason has been forbidden to overshoot herself, while all that follows from the distinction was reserved for future philosophy to explore. The transformation of things into concepts, the origin of concepts, of language and similar problems, may henceforward be detected by keen eyes as luminous spots which will disclose themselves after centuries as the beacons towards which philosophy has been directing all her course.

Abstraction, the capacity the mind has of forming general ideas, is not an active power of the understanding or the will, but it accomplishes itself naturally and inevitably as our perception leaves behind it an image in memory (habitus derelictus ex primo

[1] See Prantl, Geschichte der Logik im Abendlande, iii. 344 ff.

actu [1]), and thus the similar perceptions consolidate or melt in one. It follows from this characteristic of our knowledge that it is all founded upon intuition or perception; which is of two kinds, external and internal. This alone can tell us *that* anything is; the judgment is then completed by the understanding. Abstract knowledge warrants no judgment as to the existence or non-existence of a thing. The senses give us no certain knowledge of things, they only acquaint us with certain signs, which have indeed a certain relation to them—as smoke to fire, or sighs to pain. Just so words are συνθήκη, arbitrary, conventional signs of ideas, of the conceptus mentis; they are thus *signs of signs*, and indirectly of things. Any one who appreciates the significance of these words will feel that a new age has begun since the speculations of Plato and Aristotle, or the words in which Cicero summed up the general theory of antiquity, 'vocabula sunt notæ rerum [2].'

Our mind is most exposed to error in the judgment respecting external things, suggested by the external kind of intuition. The senses are less to be depended on than the intuitive knowledge of our own inward states. 'Intellectus noster pro statu isto non tantum cognoscit sensibilia, sed etiam in particulari et intuitive cognoscit aliqua intellectibilia quæ nullo modo cadunt sub sensu, cujusmodi sunt intellectiones, actus voluntatis, delectatio, tristitia

[1] This expression is much more just than those current in our own day, such as 'Zurückbleiben von Resten,' or, worse still, 'Narben in den Nerven,' and 'schwingende Vorstellungen,' words without any meaning in particular. Occam touches the two real points, activity and habit—showing once more how much we have still to learn from the despised dark ages of mediævalism.

[2] Herder, however, repeated this view in the last century.

et hujusmodi quæ potest homo *experiri* inesse sibi, quæ tamen non sunt sensibilia nobis, nec sub aliquo sensu cadunt.' But it is only the states, not the nature or essence of the soul which is to be known in this way. Whether the sensations and emotions, the acts of thought and will proceed from an immaterial being is uncertain[1].

Granted that these are only loose blocks rather than a complete edifice, they are the blocks with which the greatest thinkers of modern philosophy, Descartes, Locke, Hume and Kant, have constructed their great erections. Especially in the two English writers the above argument will meet us in almost the same words. As Occam did not shrink from the ultimate consequences of his views and was prepared to trace back to principles which could only be derived from experience, even the syllogistic thought which was supposed to lead to necessary truth and self-evident knowledge, it may be asked whether Locke and Hume are not really restorers of his view, according to which experience was implicitly made the sole source of knowledge; and whether the whole English philosophy of the present day, that of John Stuart Mill, Lewes, and the rest included, is not really standing at the very same point as the Franciscan monk of the fifteenth century.

The Church had thus renounced the attempt to regard the truths of salvation as fitted for the illumination of reason, or to seek proofs for them in the latter. The attempt of Raymond de Sabunde, which has been immortalised by one of Montaigne's most interesting essays, to prove the doctrines of Christianity by natural revelation, continued to stand

[1] Ueberweg, Grundriss, ii. 235.

alone. Religious faith drew back into its original starting-place, the depths of the human soul. Disgusted with the dry intellectual refinements and disputes of the Schoolmen, the finer minds of the age took refuge in inward revelations, the direct intercourse of the soul with God, and the holy calm of mysticism. The subject seeks with all the powers of the soul to reach and mingle with the Absolute Intelligence, to rest in it, to know and to behold the supernatural truth. The separation between subject and object had accomplished itself in the consciousness of the age, and modern philosophy was heralded. The aspirations of the whole preceding period concentrated themselves in the souls of the chosen few. In union with the object, they said, is true knowledge only to be found; let us become one with God. This longing finds its most touching expression in the exhortation of Master Eckhart, the mystic: 'Ach lieber Mensch, was schadet es dir, dass du Gott vergönnst, dass er in dir Gott sei?'

To sum up briefly the results of the intellectual work accomplished by Occidental humanity in the Middle Ages, we find:

1. By starting from the Absolute Intelligence, the chief cravings of the reason, after unity and spirituality, receive due satisfaction.

The individual Gods of popular belief, the individual atoms of Demokritos, the individual ideas of Plato, the individual substances of Aristotle, disappear, and in their place there reigns the one God, the one matter, the one substance.

2. Metaphysic, something transcending the Objective, becomes possible. The material and the spiritual are separated. The elements of the former are investigated. The way is prepared for Descartes'

distinction between extended and thinking substance.

3. The laws of the thinking mind are attentively and assiduously observed. The place of the objects and Platonic ideas is taken by concepts.

The special onesidedness of mediæval philosophy consisted in the absorption of all individuality by the Absolute Intelligence.

The crisis announced itself by the threatening reassertion of the objective world, as a relapse towards the objectivism of antiquity.

But the spiritual standpoint was not to be lost: against the oppressive supremacy of the objective world, the conviction reared itself that the true point of departure must be spiritual; but it is not the absolute but the individual intelligence that Descartes proclaims as the first and only certainty.

In the *Cogito* the relation of subject and object is implied as the primary condition of all knowledge. It is the vital principle of modern philosophy.

To investigate this relation, to lay down exactly what belongs to the subject, what to the object, and how they act upon each other, these are the problems for modern times.

We shall see grave oscillations towards one or other extreme, till at last the key to the problem is found by Kant; we shall see the systems of antiquity revive for a time and then, one after the other, pass away for ever.

The true deliverance from error is only reached when the source of the error has been discovered. And therefore, in the whole history of the world, no other intellectual feat has had the emancipating power of that of Kant.

He will show that there is an element of truth

in every system, but that all are incomplete; he will show that they have their origin in the nature of the human reason; and he will lay bare the nature of this reason to its very roots, and so put an end for ever to the controversies of the schools.

Thus the development of modern philosophy stretches itself before us as a clearly defined problem at the outset, with a complete solution at the close. The Cartesian Cogito corresponds to the Kantian Dianoiology. We have now to trace the path leading from the one to the other.

MODERN PHILOSOPHY.

DESCARTES.

(1596–1650.)

Νοῦς ὁρᾷ καὶ νοῦς ἀκούει, τἆλλα
κουφὰ καὶ τυφλά.—EPICHARMOS.

DESCARTES is the Atlas on whose powerful shoulders rests the whole firmament of modern philosophy. From him, as from their common root, proceed the two most important and most fruitful developments of philosophic thought, the *idealistic*, which connects Spinoza and Leibniz with Kant and Schopenhauer, and the *mechanico-physical*, which through Hobbes, Locke, and the French school leads likewise to Kant, and, after being tested and purified by him, has since become accepted as the only legitimate method of all scientific observation and research.

No doubt even before Descartes Lord Bacon must be mentioned with due honour as the reformer and founder of a truly scientific method of research. But his methodical work is restricted to physical science. Here he established the *inductive* method as the only true one, which, beginning with facts and their careful observation, should gradually proceed to rules, laws, and theorems. Thus the heavy burden of Aristotelian formulas was thrown off, and a new beginning made for the free observation and independent appreciation of facts. For, in spite of his inclination to the empirical, Aristotle started invariably from *causæ primæ*, from *principia et elementa rerum*, and

from axioms, while his followers, starting from the same ground, thought that they might arrive at truth by means of such syllogisms as Aristotle had taught in his *Organum*. In his *Novum Organum* Bacon traced and established his method in the very opposite direction, representing the perceptions of the senses and experiment as the real sources of all truly scientific knowledge, which ought never to follow preconceived opinions or so-called idols, but strive to become a faithful copy of the real world. 'Science is nothing but the image of truth, for *truth of being* and *truth of knowing* are the same, and do not differ otherwise than as the direct ray differs from the reflected ray.' 'That alone will be the true philosophy which renders the voices of the world as faithfully as possible, and which, as it were, writes down what the world dictates, adding nothing of its own, but only repeating and, so to say, re-echoing.' It is clear from such passages that Bacon cared less about a philosophical establishment of his method,—for, in that case, he could not have passed over the questions of the essence of the mind and the nature of its knowledge,—than for laying down certain rules according to which all scientific knowledge should proceed. He was therefore little quoted and discussed by real philosophers, while students of natural science often appealed to him as the highest authority, he having, if not opened, at all events fortified and secured the empirical method as the true method of all scientific work.

The vital point of his doctrine, however, namely, that the material of all knowledge must be given by experience, may well claim philosophical significance also, for it indicates both the legitimate extent and the limits of empiricism. That there are grave diffi-

culties with regard to the mere *reflexio*, and Bacon's *iterat et resonat*, has to be proved by real philosophy, which, in its inmost and truest nature, is not merely a doctrine of method, but Metaphysic. The practical tendency of Bacon shows itself in his representation of the sciences, both by his giving advice as to the making of discoveries, and by his famous saying that 'Knowledge is Power.'

Schopenhauer has truly said, that what Bacon did for physics was done by Descartes for metaphysics, namely, to begin at the beginning [1].

To doubt everything became for Descartes as well as for Sokrates and Kant the means of discovering the greatest and most significant truths. Doubt as to the truth and validity of existing explanations is itself to be explained only as the fermentation of a new truth striving to rise to the surface. Doubt is a disease of privileged spirits only, for ordinary mortals are satisfied with the nearest and most trivial causes, such as, that a man walks because he has two legs. If only the power of the intellect is sufficient and the love of truth pure and vigorous, then, though often after a thousand pains and travails, truth rises to the light, or rather becomes itself a light, illuminating the world, and changing the pale and indefinite glimmer of the moon into the brightest splendour of the sun. If this is not so, if the power of the striving intellect fails, then a chasm remains open, philosophy succumbs to scepticism, though always waiting and watching for a coming deliverer.

'I cannot understand how the apple falls to the ground'; thus said Newton. 'I cannot understand how man can move himself'; thus said Robert Mayer.

[1] Schopenhauer, Parerga und Paralipomena, i. 72.

'I cannot understand how we can assert anything with certainty'; thus said Descartes.

And was he not right? Was there not a truth which had lasted for many thousand years, which had satisfied all requirements, namely, testimony of the senses, *consensus gentium*, rational explanation, a truth that formed a foundation not only of theoretic speculation, but of all practical institutions, which not long ago had been completely wrecked, namely, that the sun and the planets turned round the earth? Surely, if at any time, it was then that doubt in everything, even in the most certain of certainties, became justified. And yet there was a still voice that whispered that reason had no cause to despair of the discovery of final truth. For had she not just achieved one of her grandest and most marvellous triumphs in the establishment of the Copernican system of the world? And did not the fact that, in spite of the hitherto universally accepted opposite view, men had quickly and readily acknowledged the absolute truth of that new system, confirm the conclusion that reason must possess principles of certainty and criteria of truth which have only to be brought to light from the depth of our inmost nature in order to command universal acceptance?

With the clearest insight into his purpose did Descartes undertake the solution of this problem. He wished to become the Copernicus of the inner world and to discover the Archimedean point, which by its immovableness would allow the lever to be brought to bear, by means of which everything else could be moved. 'I might count upon great things,' he says, 'if I could only find something, be it never so small, which is absolutely certain and unassailable.'

Cogito. This was the firm point, this the basis on which everything else had to be built up. After long and energetic strivings his powerful mind had reached this goal, and well it behoved him to shout εὕρηκα; for he had found the principle unknown to the whole of antiquity, and which in future should become the only starting-point of all philosophy. He had discovered the *Ego*.

The only immediate certainty and immovable truth, he thought, is our own consciousness, everything else being derivative and secondary. Even to doubt this truth can only serve to confirm it.

The whole world with all that lives and moves in it is my representation only. What then justifies me in ascribing to these representations, reality and true existence? And how does it happen that besides these, the only certain mental processes and states, we accept and believe in a material world and corporeal beings, in fact a world without us? Such questions now became possible, they could not be ignored, and they led of necessity to a Critique of Pure Reason.

In order to appreciate fully the greatness and strength of the position conquered or occupied by Descartes (alas, such is the confusion of thought in judging of this man, that even Lange does not hesitate to speak slightingly of the *notorious* '*Cogito, ergo sum*[1],') it will be useful to compare his doctrine with those that preceded it, and especially his idealism with that of Plato. We shall then see the immense progress that Descartes has made beyond Plato, who, it may be objected, had likewise taken human reason as the starting-point of his investigations. In reply to this however it may be observed:—

[1] Lange, Geschichte des Materialismus, i. 198.

1. That Plato, like the other writers of antiquity, proceeds ontologically and takes man as a genus, together with his reason as a faculty, requiring no further explanation. In his eyes, this or that man is as real as himself, and endowed with the same faculties. Descartes, on the contrary, proceeds critically, and concentrates all the rays of our knowledge tending towards an outer world, till he arrives in the end at the central point, the infinitely small, which he had sought, and which is the most certain of all, and the foundation of everything else, namely, his own *Ego*, his self-consciousness, the true *subject* of all knowledge, before which the whole outer world, with all men belonging to it, nay, in the end our own reason, had to produce their credentials, in order to gain a recognition of their existence and their claims.

2. According to Plato, reason is the only true quality of the human soul, given to it immediately by the gods, and belonging to it with her whole apparatus—the ideas. The perceptions of the senses are illusive, and through the darkness of the organs of sense, which are but tools of sensation, the rational soul sees the true entities, that which is universal and eternal, the ideas. Descartes, on the contrary, though he retained the word *cogito*, I think, yet used it only in this case as a *denominatio a potiori*, and wished it to comprehend all affections of self-consciousness, therefore all acts of the will, of sensuous perception, sensation and affection[1]. We can

[1] 'Nihil esse omnino in nostra potestate præter cogitationes nostras, non mihi videtur figmentum sed veritas a nemine neganda; saltem sumendo vocem *cogitationis* meo sensu pro omnibus operationibus animæ, ita ut non solum meditationes et volitiones, sed etiam functiones videndi et audiendi, determinandi se ad hunc potius

easily perceive the great importance of this extension of the meaning of *cogito*, through which it is for the first time possible to bring the mysterious gift of thinking in connection with the lower functions of the soul and the perceptions of the senses; to determine their mutual relations, and to prepare for the future a solution of all the riddles attending the nature and, it may be, the origin, of thought. 'My self-consciousness and all that is contained in it, that is my true *Ego*.' Thus was the great truth proclaimed which had been discovered by Descartes. With this discovery the unity of the spiritual being was restored, which had been broken up by Aristotle into a nutritive, a sentient, a motive, and a thinking soul. It rouses our interest, nay even our pity, if we see what pains it cost Descartes to give to his contemporaries and friends a clear perception both of the truth and the importance of his discovery. Again and again he has to repeat and to explain it, and to answer such silly objections as, why one might not as well say *respiro ergo sum*, *ambulo ergo sum*, instead of *cogito ergo sum*. It is but another illustration of the difficulty with which a great and important truth gains general recognition.

One of the most fortunate results was the sharp distinction applied consistently, and everywhere determinately carried through, between self-consciousness on one side and the soulless, purely corporeal, i.e. strictly mechanical outer world, on the other. By it these two great spheres were protected against mutual encroachments: the spiritual, psychological, and logical questions were approached from their spiritual side only, while none but purely mechanical

quam ad illum motum, quatenus ab illa dependent, sint cogitationes.' Cartesii Epistolæ, ii. 4, Amstelod. 1682.

principles were applied to the material world. Here more than anywhere we see the greatness and the persistent influence of Descartes, in his opposition to ancient philosophy, and still more to that weedy growth, the false definitions and quibbles of the schoolmen, many of whom in their petrified dogmatism knew little more of Plato and Aristotle than their name.

Was it not indeed an echo of Plato's doctrine of ideas, this playing with entities which represented unintelligible words and mere abstractions as causes and explanations of the unintelligible phenomena of the world, and was satisfied with these, as if the mind of men required nothing more? Was it not by the baneful influence of the Aristotelian dogma, that everything was imported into the *formæ substantiales*, that the concepts of substance and accident, of the actual and the potential, and all the categories were violently tossed about, so that in this everlasting vortex no one could find his way out of the mazy labyrinth of his own thoughts? Philosophers were wandering round and round, while they imagined they were advancing. The real and material world did not exist for them, or was despised by them in the spiritual pride of their pompous philosophy and their Christian dogmatism that claimed everything for the spirit and looked upon matter as worthless and sinful.

The sharp line of demarcation, which Descartes drew between consciousness and the material world without, produced this great advantage, that the latter became completely unspiritualised and ruled by one principle only, namely, the mechanical, that of motion by pressure and impulse. For although Aristotle had so defined matter as to represent it in

its fundamental nature as something purely passive, as materia prima, nevertheless the Greek thinker had introduced by a back door the entelechies, the potential powers or forms, and recognised in them the true essence of things, and thus invested them with substantiality. It was in this artificial fortification that Descartes effected a breach, by showing that these very forms are the unreal, the illusive, the purely phenomenal, and that in order to arrive at the true essence of things the whole outer world must be conceived as one mechanical problem, to be solved by mathematics only [1]. The different qualities must therefore in the end be reducible to one, in which all depends on a more or less, or in other words, on quantitative distinctions. Here we perceive clearly the connection between Descartes and Locke, and the important distinction established by the latter between primary and secondary qualities. We also perceive how the true doctrines of Demokritos and the Pythagoreans which were kept separate in ancient times,—the former upholding the strictly mechanical principle, the latter making mathematics the centre of all knowledge,—were combined in the mind of Descartes, and how the Aristotelian concept of matter was thus enclosed within clear and definite limits, excluding all heterogeneous elements. How much new light was thus thrown on old problems may best be seen by the fact that Descartes admits no difference between organic and inorganic beings, but perceives clearly that, taken simply as external phenomena, the whole material world must be conceived as a thoroughly homogeneous substance, obeying mechanical laws only, and

[1] 'Omnis materiæ variatio sive omnium ejus formarum diversitas pendet a motu.' Cartes. Princip. Phil. ii. 23.

to be explained in all its modifications by these laws. How much independence of thought was required in order to arrive at this view and to apply it consistently to an explanation of nature, we, who are reaping the fruit of the seed thus sown by Descartes and accustomed to think his thoughts, can hardly realise. We must transport ourselves into his age, with its mystic and theosophic tendencies, when spirits of all kinds, vital and animal, having their seats in different parts of the body, sympathies and antipathies, good and evil demons, influences of the stars, and similar fancies were running riot (all this being supported even by Bacon in submission to the general belief), to enable us to bow respectfully before that strong mind which by its own rays of light scattered the phantoms of mysticism, together with the whole rubbish of scholastic formulas, and thus cleared the field for the true scientific method which has since from century to century led to new and then unthought of triumphs, and by uninterrupted and faithful labour collected both the material and the plans for the gigantic structure of exact natural science.

We need not wonder therefore that the strictest materialists, for instance the French author of 'L'Homme Machine,' appealed to Descartes, and pretended to be Cartesians, because that philosopher had been the first to frame a consistent conception of matter, and in consequence to declare his conviction that the life of the plant, the body of animals and that of man, with all its wonderful and delicate organs and vital functions, must be solely and entirely explained as moved matter, that is, strictly mechanically. Hence Descartes was one of the first to accept fully Harvey's much contested discovery

of the circulation of the blood. Hence also we may understand why all great thinkers who advanced the study of natural science and rescued it from the mazes in which it had lost itself, drew their inspiration from him. Even in modern times what was it but a vigorous application of the Cartesian principle, when the great discoverer of the mechanical equivalent of heat, Robert Mayer, delivered science from the old mystic *Imponderabilia*, in words clearly reminding us of Descartes, 'there is no immaterial matter;' glorying, as he well might, that in banishing these Imponderabilia he had banished the last of the Gods of Greece from the temple of science.

This leads me back to the grand continuity of philosophic thought, and I must once more endeavour to show, from this new point of view, the opposition and at the same time the development of the views of Plato and Aristotle in their relation to modern truth. It is the true object of the history of philosophy to make us see the development of philosophic thought, and we shall never be able to understand and appreciate the present, unless we fully and clearly apprehend the merits of our own intellectual ancestors on whose shoulders we stand, and on whose thoughts we still feed.

Plato, starting from a rational psychology and looking into the depth of the nature of spirit, perceived clearly that all which is known by spirit can only be of a spiritual nature. We shall return to this point when treating of Descartes, and shall find that it forms an unshaken conviction with all great thinkers, and that they only differ in the way in which they tried to reach the material world, and in their endeavours to bridge the gulf which they had made. Plato did not look for that bridge, but pushed

forward the boundaries so far that the whole external world was included within the spiritual domain. He realised spiritual objects only and lent to his ideas existence in reality.

Descartes remains so far at the same point as Plato, that he also recognises spirit as a substance totally different from matter. But he defines its essence far more precisely by generalising spirit into consciousness and representing thought only as a special, though the highest function of it. In opposition to Plato the reality of the ideas is completely denied. Descartes tries to show that these ideas rather veil the true nature of the external world, and keep our reason in perpetual self-deception by making her believe that if she has only found a word for the explanation of phenomena, these phenomena themselves have been explained. This is the true character of the Cartesian battle against the empty words of the schoolmen, and the true meaning of his demand that the whole outer world should be conceived as a mechanical problem, that is, as one infinite natural force. How untenable the Platonic ideas became with such a philosophy was apparent as soon as attention began to be directed to the origin and formation of thoughts and their psychological centre, because the subordination of special under more general concepts rendered a separate existence of ideas impossible.

The Aristotelian conception of Matter leads to the same, or, more accurately, to the opposite error. For material substance is something differentiated and self-subsisting, of which Aristotle himself required that it should be always Subject, and never Predicate. But Aristotle makes the conception of matter include what can properly only belong to mind, viz. the clas-

sification of things in ascending order, so that what from one point of view is form, from another again is only matter; as, for instance, hewn building stones in themselves represent form, while in relation to the house to be built with them they are only matter. Thus the conception of matter was sophisticated by the intrusion of special and universal forms (i.e. of intellectual elements) and hence became incapable of strictly scientific treatment. It may be said accordingly that Plato turned the Predicates, or forms of thought, into realities, while Aristotle transported Predicates and mental concepts into the realms of reality, whereby both became unfaithful to their own principles. Descartes, on the other hand, grasped both principles in their purity, renounced the ontological compromises of the Greek thinkers, such as the reality of Ideas and Forms (the scholastic quiddities and *formæ substantiales*, and Essences or *qualitates occultæ*), and contrasted instead the two Substances the *substantia cogitans* and the *substantia extensa*. He placed the two worlds of mind and matter in direct opposition, in the full conviction that each must be studied in itself, according to its own special laws and nature, and that it only remains to discover in what way these act one upon the other, as our consciousness itself assures us that they do. In other words, Descartes professed an explicit Dualism, having discerned that the efforts of Plato and Aristotle to break down the barriers between the two regions had only ended in over-clouding them.

Before enquiring how Descartes proceeded to bring these two distinct and yet parallel and inseparable worlds into such a relation of connection and interaction as should be comprehensible to the most commonplace experience, we must first notice the attitude

of this great thinker towards the age which gave him birth, and the connection between his ideas and the tide of contemporary thought. For as soil and atmospheric conditions determine the life of plants, so, at least in part, the general conditions of the time determine the range and purport of the greatest thinker's achievements.

The mighty synthesis completed in Descartes' mind, uniting mathematical thought with the external sensible world in the one idea of matter, was rendered possible by the revival of the natural sciences, and especially by the discoveries of his great contemporary Galileo, who opened to enquiring minds the prospect of penetrating, by the help of his mathematical constructions, into the remotest depths of the universe, and explaining the laws of its phenomena. Consciously, or otherwise, all study of the universe is grounded upon one or other of two fundamental views, the *astronomical* or that of celestial phenomena, and the *religious* or that of the spiritual world. Both are intimately concerned in the first beginnings of the intellectual life, the latter however predominating, so that the stars appear as higher powers ruling the life of men, as in fact they did at that period in the history of humanity. In proportion as the two realms become separated, one assumes the marks of the strictest necessity, and the other of free consciousness determining all action. The course of the stars, unchangeable from age to age, the great world-time-piece which pursues its even course, unalterable by an outer will, and wholly inaccessible to the action of any human influence—all these are sources whence eternal nourishment is drawn, as by direct perception, for the concepts first of necessity, of fate, and later, with fuller knowledge of enforced

movements,—of a vast mechanism. Although all motion becomes intelligible to us at first by the light of our own movements (as the idea of Force, the highest and most general in physics, undoubtedly proceeds from the effort made by our own bodies in order to move any object, so that even at the present day we fail to find any apter or more expressive phrase to denote the effect of force than the genuine human word *work*), yet those vast astronomical phenomena supply a fixed and permanent ground of interpretation for the daily manifold motions of which it is not always easy to recognise the permanence among the variations of sensible appearance. As certainly as the starry firmament preaches to the religious consciousness '*Credo in unum Deum,*' so surely for the astronomical consciousness its utterance is '*Credo in unum motum.*'

This peculiarity of astronomy as a preliminary and fundamental science, by which mathematical knowledge is at the same time tested and acquired, also explains why this most difficult science is yet the first to be vigorously developed among all races and peoples. Astronomy alone could supply the material necessary for the determination and measurement of time; men looked to it for number, and learnt from it to count—the first step in calculation. The insight of the Pythagoreans into the great significance of number is connected with their advanced astronomical acquirements.

Astronomical science is thus distinguished from all other physical sciences by the fact that in it alone motion can be dealt with in its purity, that is to say, in the simple forms of mathematics, apart from the further circumstance that it admits of tranquil contemplation, because its objects are external to the

sphere of the will and affections, and thus final causes do not suggest themselves, unless artificially. We can therefore scarcely be mistaken in seeking the stimulus, to which we owe Descartes' great philosophical synthesis, in the previous important revolution effected in astronomical ideas by the Copernican system (all open recognition of which however was obliterated by Descartes to avoid a conflict with the clergy), and more especially in the giant strides which the science had made through the genius of Galileo.

We shall see hereafter how, in precisely the same way, the Newtonian theory acted upon the philosophical consciousness of the succeeding generation, and what grave significance it possessed for the intellectual development of Kant. And it was also destined to elucidate and complete the conception, which Descartes, under the influence of Aristotle's definition, had left imperfect, namely, that of the relation between motion and matter.

We must not, however, omit to note the important influence exercised by the *religious* theory upon the birth of Cartesian Dualism, and derivatively, upon the luminous and fruitful separation effected between the world of pure mechanical matter and the spiritual world. The thousand years' supremacy of Christianity had effected something in the highest degree favourable to this separation: it had effected a revolution in the common consciousness the like of which was only possible to the most enlightened minds. Nature was robbed at once of life and of divinity, and so became for the first time a possible object of cold, sternly mechanical investigation. The fundamental idea of Christianity, a Creator whose work the whole world is, at once annihilates the countless apparitions of deities, living and revealing

themselves in nature; it banished the play of personal self-will and prepared the way for the conception of a natural order, moving according to the laws ordained from eternity by an eternal will. And in this the Christian theory agreed with the highest conceptions of Greek philosophy. The heathen gods took refuge, to prolong their days, in the popular belief in demons and magic, and so continued, for years to come, to haunt the writers on natural philosophy. It may therefore fairly be assumed that Descartes believed himself to be strictly within the lines of Christian dogma, and indeed to be supporting by philosophical arguments a dualism which lay at the very heart of Christianity. This appears clearly from the second part of the title of his 'Meditationes de prima philosophia, in quibus *Dei existentia et animæ a corpore distinctio* demonstratur.' But the Jesuits had a keen scent and detected both the dangerous truth and future consequences of the arguments. They put his books upon the Index after they had long embittered the author's life, and finally drove him into many inconsistencies and compromises unworthy of his better judgment and convictions.

The definition of the two substances in its grand simplicity, and their final combination in a higher unity, are thus seen to be related to the twin intellectual tendencies above described. This highest unity, which brings about the junction and interaction of the two substances,—so that the special, mechanical motion of our sense-organs produces the idea of an external object in the soul's consciousness, while conversely an act of will by the soul is able to move the body consciously in a determined way,—this highest unity is God. The miracle is worked by divine

power, for without a constant, continuous miracle, renewed at every moment, this co-operation and reciprocal influence of two radically diverse substances is wholly inconceivable.

And here the question arises, whether by the introduction of this idea the chain of exact knowledge on which Descartes insists is broken and his certainty thereby reduced to an illusion, whether, after having at last, with much labour, discovered the first link of the chain in the immediate facts of consciousness, he has forthwith unaccountably introduced a foreign element, a mere hypothesis, the creature of his own imagination? Or was there some necessary connection to be found leading from the immediate certainty of the individual consciousness to the assumption of a supreme Being, whose existence again might serve to explain what was otherwise inexplicable? We owe it to an intellect like that of Descartes not to decide lightly that his God is only brought in as a *deus ex machina* or by way of concession to the religious feeling of his contemporaries, or even because he himself was still entangled in the network of theological dogma;—as a compatriot has said of him, *Il commence par douter de tout et finit par tout croire.* We are at least bound first to enquire seriously whether his assumption really rested on substantial grounds, and whether we should not see in it the result of rational irresistible conviction rather than a mere expedient; in which case it would have to be acknowledged as a natural phase in the development of subsequent forms of philosophic thought.

In his argument in support of the existence of God (Meditationes de Prima Philosophia, iii) Descartes starts from the conception of Substance, and lays down that the ideas in our minds may have more or

less reality, so that, e. g. ideas for which substances supply the material are obviously more real and perfect than ideas which refer only to qualities or modes of substance. Now the greatest possible reality of which an idea admits belongs to the idea of an infinite, eternal, immutable, omniscient God. 'But the effect cannot possibly possess more reality than the cause: and in so far as the reality of an idea transcends that of my own nature, its cause cannot lie in the latter, but in something external, that is to say in the being itself. It is true these are to some extent *argutiæ scholasticæ*, which remind us of the ontological demonstration of St. Anselm, and contain the fallacy of arguing from conceptual to real existence: indeed the argument ends in a vicious circle, for the objective reality of external things is subsequently demonstrated from the existence of God, while here the existence of God is proved from our idea of him as the most perfect being. He then continues: 'Even though the idea of a substance is in my mind, because I am a substance myself, this would not give me the idea of an infinite substance, because I myself am finite, and this idea must therefore be derived from some other substance that is actually infinite. Neither can I believe that the Infinite is conceived, not as a true idea, but as the mere negation of limit, as we conceive rest and darkness to be the negation of motion and light. On the contrary, I declare openly that an infinite substance possesses more reality than a finite one, and therefore the idea of the infinite in a certain sense must *precede* that of the finite, or in other words, the idea of God is antecedent in me to the idea of myself.'

In this sentence, the central point of the argument, truth and error are intermingled; its weakness arises

from the still prevailing idea of substance with its consequent hypostasis of the Deity. All serious thinkers however will agree that the idea of Infinity is not negative, that it cannot possibly be derived from any finite being, not even by the action of sense and reason; which are in their nature *conditioned*, and that accordingly the source of the conception must lie without and beyond the limits of rational knowledge. It is in harmony with this that Max Müller, in his important book on the Origin and Growth of Religion, takes this conception as the starting-point of his explanation, and shows how religion arose with the pressure of the Infinite upon the finite subject, and how all religious systems are but progressive phases of the endeavour to give a rational expression, a sensible and intelligible garb to what is super-sensible, transcendental, and irrational in that consciousness of the Infinite which every sensible perception forces on us. And to this writer we are indebted for the first clear and sufficient light cast on this obscure and difficult matter. This is the point at which metaphysics, or the doctrine of the inconceivable, comes in contact with religion, or rather begins to find there its own expression, thus justifying Schopenhauer's dictum that all religions alike only seek to satisfy men's own metaphysical cravings.

Let us assume then—and the succeeding passage proves that we are led by our own existence, through the idea of causation and a *regressus in infinitum* through infinite time to a *causa prima*, or God—let us assume, I say, that the idea of substance, as to which Descartes certainly had no doubts, became in this way associated in his mind with the absence of limit in time and space (though to *conceive* the latter transcends our powers); still we may perhaps feel some

surprise when we find Cartesian scepticism casting anchor at last upon the thought of a still unknown God as the firm substratum of all other existence. As soon as the idea of substance is reached, there is no escape from the logical consequence of a substance without end in space or time. We shall meet this again in Spinoza's *substantia infinita æterna, quæ per se est et per se concipitur*. We shall find also that, until just before the composition of the *Critik*, Kant himself had no other explanation to offer of the relation between individuals and the universal course of things than the *omnipræsentia* and *æternitas rerum* in the Godhead. It is not to be wondered at that Descartes' substance should still bear all the features of the Christian Divinity—wisdom, goodness, justice, and truth. Old fetters are not to be broken in a moment, and as the germ passes through slow and strange transformations before the blossom opens, so philosophical thought passes slowly and painfully through its stages of growing clearness towards the fullest truth.

It is then by divine power that the co-operation of external or bodily substance with spiritual consciousness is effected. And thus the reality of the external world, or its agreement with the inner world of thought, is proved by the divine truthfulness, which would not suffer us to be perpetually deluded by false and deceptive appearances.

We may see in this only a desperate expedient for solving or evading the final difficulty of the system; but at the same time it must be confessed that the difficulty is one with which all later generations have had to wrestle, without their labours having hitherto led to any satisfactory issue. At the present day it is admitted by the ablest of our

men of science to be impossible by any means at our command to span the gulf which ever separates the world of consciousness, of mind, of unity, and free self-determination from the world of mechanical necessity, of subdivision, of external inter-action, and the strictest causal sequence. The whole apparatus of the most advanced natural science fails altogether to *explain* the simplest and commonest sense-perception, fails, that is to say, in deriving it from the mechanical principles of matter in motion. No arts avail us here: we may take refuge in the imagination of such intermediate entities between matter and spirit as 'vital spirits,' 'nervous fluid,' 'nerve-æther,' and the like, we may attenuate and dilute matter itself until it eludes the senses and becomes a mere shadow or thing of the mind, but matter continues matter, and remains for evermore unable to create *from itself* the opposite principle of consciousness. This is as impossible as it would be for mind or consciousness to produce the smallest possible effect on matter, for however infinitesimally small its range, as soon as a place in space is assigned to it and the power of acting upon matter, we are forthwith dealing with matter, no longer with feeling or mind. As long as we are compelled by the constitution of our minds to conceive matter and mind as independent, self-existent beings, i. e. as substances, there can be no bridge to connect them, and it is only possible to resolve the two principles into one, by sacrificing what is essential to the one or the other.

It may thus be said, on the one hand, as by the materialists, We *seem* to feel, to think, to will, we seem to exist as individuals, but in truth there is nothing anywhere except the motion of minute, inter-acting atoms, following strict and unvarying

laws; or, on the other hand, it may be said, as by Bishop Berkeley and the idealists, that the whole seemingly real outer world can be nothing but an image proceeding from the mind, from the intellectual substance itself, which cannot possibly be generated by anything so radically different from itself as matter. The whole outer world is appearance.

The only other way across the gulf is by a *salto mortale*, like that accomplished by Descartes, in the assumption of divine intervention and a constant continuous miracle. It was exactly the severity of his logic and the keenness of his insight, far in advance of his contemporaries, which made him discern one matter, one force, one single mechanism in the whole of nature, with its infinite variety and endless Protean metamorphoses, in which the same objects assume a thousand forms, and appear, now freely varying, now subject to law; and thus after sounding the depths of the insoluble problem he was forced into the acceptance of a transcendental compromise.

Before proceeding to those points in regard to which Descartes' inconsistencies and one-sided dogmatism required correction by his successors, we may shortly enumerate those contributions to the sum of knowledge which have entitled him to the name of a restorer of philosophy and a precursor of the Kantian doctrine.

1. As already observed, the greatest achievement of Descartes was to have started from the study of the knowing subject without preliminary assumptions. For it is here alone, from what is directly known and given, that light can be cast either upon the degree of certainty or the legitimacy of everything else. The problem which has occupied all philosophers since, and indeed must be regarded as lying at

the root of every other, now comes into existence; the question, namely, of the relation between the *ideal* and the *real*, between what is subjective and what is objective in our knowledge, between what belongs to our knowledge as such, i. e. in virtue of its innate force, and what must be attributed to things external to ourselves, of which the image is present to our mind. In a word, it raises the great question of the difference or agreement between the world of thought and the world of things.

2. We have seen that the weakness of ancient philosophy lay in its subjection to the ontological delusion and the premature assumption of real entities. 'The stone is not in my mind, but only its form,' said Aristotle, and, upon this, forms were transformed into entities (οὐσίαι, εἴδη). 'The stone is not in my mind, but only the idea of the stone,' declared Plato, and forthwith a separate reality was assigned to 'ideas' in the world of things. It was Descartes' merit to have conceded real existence only to the universal principles of matter and thought, advocated by both philosophers, while denying the real separate existence of objects derived from these and their title to the quality of 'things in themselves.' The progress involved in this step is too immense to need dwelling on. In this generalising of the two opposites there is involved the reconciliation of another opposition which confronts us irreconcilably in the future, from Leibniz to Kant, that namely between the individual and the general. The latter alone can be the object of reason, to which it is akin, on this alone can reason operate and found its corner-stone, the principle of causality. It is exactly their character of generality or universality which invests ideas or forms of thought with their

value and significance. But reason must not stop short at these or exalt them into special or individual existences, it must press on toward higher principles of universality, from whence these derive their true nature and origin. And this is what Descartes himself did, by exhibiting the two substances together as the true source from whence all intellectual and material forms derive their being[1]. There is no organised body, however elaborate its structure, but what must be conceived as a modification of extended substance, i.e. of matter working according to strict mechanical laws[2]. This alone will serve to make

[1] Descartes, Princ. Phil. i. 53: 'It is true that a substance may be perceived by means of any attribute, but there is always *one* quality which more especially constitutes its nature and essence and to which all others may be referred' (the quality which Spinoza afterwards called *par excellence* 'attribute' in contradistinction to 'modes'). 'Thus the nature of all material bodies consists of extension in three dimensions, as thought constitutes the nature of the thinking substance or mind. For anything that can be predicated of a body presupposes extension, and is only a state of extended substance; and similarly whatever goes on in the mind can only be a special condition of thought. Thus we can only conceive figure as something extended, or motion as taking place in extended space; and similarly imagination, perception, and will can only occur in an intelligent, i. e. a conscious being. On the other hand, extension can be conceived without figure or motion, and thought, or consciousness, without imagination or perception; and the same holds good of the remainder, as every attentive reader will perceive.'

[2] 'In the whole of Nature there is thus only one and the same material, to be known only by the fact that it is extended. All its clearly recognisable qualities thus reduce themselves to this: it is divisible, and its parts are movable, and therefore it is capable of all the states which may follow from the movement of its parts. For a merely imaginary division effects no change, all the variety and differentiation of its form depend upon motion. And this has been already observed from time to time by philosophers; who have maintained that Nature is the principle of motion and rest. For they understood by Nature, that in accordance with which all

everything else conceivable, even though it remains incomprehensible itself. Similarly as to ideas. Ideas themselves are but modes of the thinking substance, of which the only true attribute or quality is thought, including under that term all forms of consciousness. A broader space is cleared for the transition and development of forms, of which Aristotle could only indicate the general outline, by breaking down the wall of separation between organic and inorganic being. As Descartes suggests, animals are mere machines. And in the same way it became possible to trace the development of ideas, and the connection (by favour of the *concursus divinus*) between them and sensations, or the organs of perception; a thought upon which it was possible to erect subsequently a system of empirical psychology, tracing the evolution of mind and the intellectual faculties, in opposition to the theoretical psychology of Plato.

3. Descartes credits the soul with the aboriginal possession of certain truths and presuppositions from which all thought necessarily proceeds: e.g. Ex nihilo nihil fit; impossibile est idem esse et non esse, etc. These are 'æternæ veritates.' 'It is also endowed with certain innate ideas, such as God, substance, thought, truth, extension, and the like[1]. There is least room for deception in regard to the truths of mathematics, which are not derived from sensible experience: and the superior certainty universally

material bodies assume the forms under which we perceive them.' Ib. ii. 23.

[1] These views gave rise subsequently to the violent controversy directed against innate ideas, and Locke—who, as a decided empiricist, never leaves the ground of realism, and wishes to deduce everything from sense-perceptions—was impelled by that very fact towards the true and very important discovery, that the *origin of ideas* was the point requiring investigation.

conceded to the conclusions of geometry arises from the fact that geometricians consider bodies only as magnitudes occupying space. 'We enumerate different parts in space, and ascribe size, form, and local movement to the parts, and a certain duration to the movements. Meanwhile we are not only fully acquainted with all these general conditions; we are also able to discern, on directing our attention to them, innumerable special facts concerning forms, number, motion, and the like, the truth of which is so completely in accord with our own nature that its discovery does not affect us as something new, but rather as something formerly known and now remembered, or as if our attention had just been called to something that was in us before, though the eyes of the mind had not yet been directed to it. And the most remarkable thing is that we find in ourselves innumerable ideas of things, which, although not to be observed without difficulty, yet cannot be treated as non-existent; and whatever we may choose to think of them, they possess a true and unchangeable nature, and therefore cannot be the creatures of our inventive fancy. Thus, for instance, different properties of a triangle may be demonstrated so that we have to admit their truth, although we had never thought of them before as belonging to the idea of a triangle.' (Meditationes, i.) On the whole we must recognise in these views of Descartes an imperfect expression of the doctrine, afterwards laid down by Kant, of the *a priori*, or the metaphysical postulates of human knowledge.

4. Everything in the material world is accomplished in accordance with mechanical laws; hence all phenomena must be referred exclusively to efficient causes. The soul is powerless to effect any change, since the

quantity both of matter and motion in the universe remains eternally the same[1].

[1] In this connection (Princip. Philos. ii. 36) Descartes enunciates for the first time the principle of the conservation of force subsequently developed and demonstrated by Robert Mayer: 'For although this motion is only a state of the matter moved, it yet forms a fixed and definite *quantum*, which may very well remain the same in its totality throughout the world, notwithstanding the changes in single parts, as when the rapid motion of a small body communicates slower motion to a large body, so that in proportion to the loss of motion in one body is the increase of impetus conveyed to another.' . . . And it is altogether rational and in accordance with the idea of God as an immutable being . . . that God who has allotted different motions to the various portions of matter at their creation, should also maintain the same amount of motion therein, as he maintains the matter itself of the same kind and in the same relations as when created.' The relation of motion to rest was also clearly developed by Descartes (Princip. Philos. ii. 26) in the same sense as the Leibnizian formula, that rest is only a kind of motion, which has given rise to the distinction, of so much importance in modern science, between *vis viva* and *tension*. 'For I must observe,' he says, 'that we labour under a great prejudice when we assume that more energy is required for a state of motion than of rest. We take this for granted from childhood onwards, because our own bodies are moved by an act of will, of which we are always conscious, while they are fixed to the ground when in a state of rest, by their own weight, of the action of which we are unconscious. For weight and other causes unperceived by us resist the motion we wish to communicate to our limbs and produce the feeling of weariness, and thus we imagine a greater degree of activity and force to be required in initiating motion than in arresting it, since we attribute to other bodies the same kind of effort with action as we are conscious of in our own members. But we may easily disabuse ourselves of this prejudice by reflecting that we have to make this effort, not merely in order to move, but also to arrest the motion, of external bodies. Thus it requires no greater exertion to push off a boat lying in still water than it does suddenly to stop the same boat when it is moving, or at least scarcely any greater, for we must allow for the action of gravitation and the resistance of the water, which by themselves would cause the motion to come gradually to an end.'

The mind however is perfectly well able to determine the *direction* of the movement, by making use of the efficient causes, under favour, of course, of the *concursus divinus*. This is an important truth, and serves to explain both the fact of organic development and the supremacy of man over all other beings. And, in proportion as, after continual experiments and attempts, men's technical capacity culminated in the acquisition of *tools*, whereby, in accordance with mathematical principles, their insight into the nature of efficient causes was enlarged; in the same proportion they were enabled increasingly to direct the motions of nature towards their own purposes, and to rule and regulate an ever increasing quantity of natural force. But, at the present day it is hardly necessary to observe, that amidst the enormous changes wrought by man over the whole surface of the globe, no particle of motive force is either created or destroyed.

5. Another important and fruitful discovery is that of the relativity of all motion: the bearing of which upon the *Critik der Reinen Vernunft* may be indicated here. For if the chief merit of the latter work lies in its having demonstrated the relativity of all human knowledge, and shown the impossibility of passing thence to the Absolute, an important step towards the truth was surely won, when it came to be seen that in the whole of this objective outer world no change can be conceived by itself, but only in relation to something else. 'In order to determine the place of a thing, we must look at other bodies which we assume to be stationary, and as we look at it in relation to different bodies at the same time, we may say that it is both in motion and at rest. If a ship is sailing on the sea, a man seated in the cabin remains in the same place, if he

considers the parts of the ship, to which his relation has not changed, but at the same time he is constantly changing his place in relation to the shores which he is leaving and those to which he is approaching. And if we assume further that the earth is in motion and proceeding just as far from west to east as the ship is sailing from east to west, we must say again that the man in the ship does *not* change his place, as determined in relation to fixed points in the heavens. If however we further assume that there are no such fixed points in the universe, we may conclude that no spot in any object is really motionless, but is only arbitrarily so considered.' (Princip. Phil. ii. 13.)

6. We have already observed that the systems of Demokritos and Epikuros show a direct relationship to the purely mechanical conception of nature; but it was also an important advance upon their doctrines when Descartes dispensed with the idea of a vacuum, which they had assumed as the only other requisite for the universal dance of atoms, and which he showed to rest on prejudices implanted by common experience. In point of fact, the rarity or density of bodies depends upon the interstices or pores which are themselves occupied by other matter of greater and greater rarity. This conception requires one important correction, which was supplied by Kant, that bodies are really only so many spaces, filled with force, but that there is no intellectual impossibility in the way of our conceiving such force to become gradually indefinitely diffused, and consequently enfeebled. Still Descartes must be allowed the merit of having been the first to oppose the crude atomic theory, which was obviously derived from the prejudice above referred to.

We may now turn to those sides of the Cartesian system which contain obvious weaknesses and inconsistencies, which the future development of philosophy was called upon to reconcile or eliminate. And of these first of all:—

1. The definition of body. According to Descartes, the nature of body is hardly distinguishable from that of the space which it occupies. *Extension* is the sole property of extended substance, or the material world. 'We must know,' he says, 'that the nature of matter or body in general does not consist in hardness, or weight, or colour, or any other sensible quality, but only in its extension in length, breadth, and height. For weight, colour, and all such qualities which are perceived in matter, may be set aside, as well as hardness, and yet the material thing continues to exist, and therefore its nature cannot be determined by any of these qualities. (Princ. Phil. ii. 4.) 'Nothing obliges us to regard all subsisting bodies as sensibly perceptible.' (Ib. 7.) 'For it is only in thought, not in reality, that magnitudes are distinguished from extended substance.' (Ib. 8.) 'We shall easily see that it is the self-same extension which constitutes the nature of body and the nature of space, and that one can no more be distinguished from the other than the nature of the species from the nature of individuals, if we abstract, e. g. from our idea of a stone everything that does not belong to its nature as a body. In the first place we may eliminate the idea of hardness, which the stone loses, without ceasing to be a body, if it is fused by heat or ground to powder. Colour may be eliminated, as there are transparent or colourless stones; weight, for there is nothing lighter than fire, which is nevertheless counted as a body; finally, cold and heat and all other

qualities, because we may not have observed them in the stone, or may know that their loss or change would not affect the material nature of the stone. We shall thus see that in the idea of the stone, scarcely anything will remain except extension in length, breadth, and depth, which exists equally in space whether occupied by matter or void.' (Ib. 11.) For this reason too a vacuum is impossible, 'because the extension of space, or a place enclosed by the extension of matter, are the same thing,' and because it would be absurd to attribute extension to nothing. (Ib. 16.) 'If God removed all the bodies contained in a vessel, its sides would touch because there would be nothing more between them.' (Ib. 18.) In a word, extension, space, and matter are the same, or nearly the same—they are *substantia extensa*. It is apparent how even this lucid thinker was led to confuse substance with its sole attribute, extension, to such an extent as to ascribe reality to non-existence—the mere form or possibility of extension—only because the same word was used as in characterising really existing extended objects. In many passages however he seems on the verge of truth, as when he discerns that there is a material difference between the extension of bodies, of which the forms may change without involving more than a change of place, and the extension of space, which is always assumed to be universally one and unalterable. (Princ. Phil. ii. 10, 12.) But he concludes the section which is devoted to this consideration with the express declaration, 'I recognise no other matter in the bodies of things than that divisible, figured, and moveable substance which geometers call magnitude and take as the subject of their demonstrations, and I recognise nothing as real in this matter except such divisions, figure, and

motion, and whatever may be deduced with mathematical certainty from those universal ideas. And as all natural phenomena may be explained from these, I cannot consider any other principles of natural science as either trustworthy or desirable.' (Princ. Phil. ii. 64.)

The central truth is here in view, scarcely veiled by the accompanying error. What cannot be explained mathematically, cannot be explained at all; the mathematical is the only method applicable to reality, and to make the use of it possible, it must have one single universal quality to deal with: this is dimension, a mode of extension.

If at the present day we have just ideas as to the nature of body, if we have learnt to regard impenetrability and weight as inseparable from the idea of it, we are still bound to remember that all these qualities are based in the last resort upon the idea of space, and that the latest result of the Critique of pure reason applied to bodies is to define the objective world as 'that which moves in space.' We shall then admire the vigour of the intellect which first grasped the idea that the true reality of all existing things must be deduced from the ideas of space. The difference may be stated thus: Descartes, starting from the idea of substance, and believing accordingly in the external world, was compelled to look on space as something real, otherwise all those bodies which existed as space-ideas would lose their reality also, while Kant, who was deeply convinced of the ideality of space, was compelled to transform the things existing in space also into ideal forms. Both however saw clearly the prime necessity which made 'only one nature and one science of nature' possible.

2. The assumption of specific differences in the bodies originally created by God—i. e. in different parts of extended substance—was a grievous burden, left by earlier schools of thought, and impaired considerably the simplicity of the mechanical theory and the possibility of explaining everything by a single principle. According to Descartes every body has an external superficial extension (its apparent volume), and an internal extension which is limited by the size of its interstices or pores. As there is no vacuum, each of these spaces is again filled by some thinner bodies—how they can be so is not exactly explained—and changes of form only take place by means of changes in this inner space, that is to say by the contraction or expansion of the walls of the pores. There is thus given us a multiplicity of material beings, even though their differences may be only modes of extension. But this involves a rigid separation of the original substances, and the wholesome principle of transition, of the rise of one form from another, because of the essential unity of matter, has its action interfered with. A new kind of pluralism, therefore, is introduced in the midst of the material world, and is left for the future to dispose of. According to Descartes, the different modes of extended substance were created by God, who at the same time set each of them in motion. Both the material substances and the quantum of motion in the whole remain the same for ever; there are only changes of place and form, effected by the communication of motion, by pressure or impulse. This unexplained opposition between matter and motion arises from the necessity of our nature to imagine a subject for every activity, and therefore also for every motion. And here, as has been said, the path of progress leads us

past Leibniz to Kant, who will show us that bodies, in relation to our thought, can be nothing more than an *x* of which we can only predicate one quality, viz. motion, or change of place. But we must not overlook the fact that this distinction between matter and motion, as laid down by Descartes, is in a certain sense preliminary to the attainment of greater clearness; for on the one hand, the conception of motion in its simplicity, and on the other the conception of matter as a purely space-idea, seem in a measure to involve the elements of Kantian thought.

3. The unexplained dualism of the *substantia cogitans* and *substantia extensa* not only jars upon the most general and wide-spread convictions, but it results also in obvious internal contradictions. Not even the driest and dreariest materialist, not the most fanatical theologian would be willing at the present day to identify himself with Descartes' reiterated view that animals are nothing but very skilfully constructed, soulless machines. Further, the destruction of the human machine, i. e. of the human body, is followed by death, disturbance or confusion in the machine is followed by abnormal determinations of the will and of knowledge. But if the soul is dependent to this extent upon the machine, it cannot well be regarded as a self-subsisting thing in itself, a *substantia cogitans*. In spite of this Descartes remains faithful to the great truth that the body can never be conceived as the cause of the soul, or the latter explained by its help.

4. Notwithstanding the simplification undergone by the idea of 'substance,' it still remains a heavy burden, imposed by the past and acting as a drag upon all real progress towards the goal of philosophical reflection. The persuasion of antiquity that all speculation must take its start from Being, was

shaken to its roots by Descartes' deep and searching doubts, and in its place the notion dawned that the true point of departure was to be found in the thinking subject, a ground that has never since been abandoned by modern philosophy. But as soon as the predicate of consciousness was discovered as something unquestionable, the idea of substance forthwith presented itself, as the existing support and subject of the predicate, and hence arose the *substantia cogitans*. The exclusion of everything external, manifold, various, or divisible, as given in extension and space relations, from the uniform, inward, unextended region proper to consciousness, necessitated the assumption of a second substance, having nothing in common with the first: and hence arose a chasm that could neither be closed nor bridged. A special difficulty is placed in our way by the *substantia cogitans*, which, according to the expression of Descartes, has dived into the body. For although it may be easy to recognise in extended matter stretching itself in all directions through space the one united self-sustaining substance conditioned in all its parts by unbroken causal and mechanical connections, a similar connection between different minds, as parts of a single substance, is absolutely inconceivable, the rather as the minds must be shown to exist in definite places, while they are separated from each other by intervening bodies. This spiritualistic tendency of Descartes, if logically followed up and developed, led with necessity to the theory of Malebranche, who speaks of God as the *place of spirits*, and consequently adds, 'Nous voyons tout en Dieu.' But what is the 'place of spirits'? Obviously only a mythological expression, suggested by the idea of a spiritual substance, and serving to

reinstate the inevitable idea of space at the very point from which it had been banished.

The idea of substance, towards which philosophical speculation is constantly being attracted, labours under one fundamental disadvantage, a disadvantage that lies in the nature of human thought and its opposition to the real, individual world which is its object,—the chronic tendency, in a word, to raise the predicate into a subject, to place a corresponding *thing* by the side of the *thought*. But the lines of demarcation, the conditions of limitation, to which ideas owe their origin, have no counterpart in nature: and on the other hand it is the peculiarity of general ideas that in forming them we disregard the differences and demarcations of nature, that is to say, of individual existence, and consider everything rather from the point of view of universal qualities or predicates.

By this road of generalisation, thought arrives at an ultimate idea in which predicates disappear and individual differences are absorbed, namely the idea of Being. When this idea comes to be realised, it seems to include all actual existence, and thus originates the idea of substance. It is however evident that nothing can be made of this conception, for it is only in proportion as it becomes invested with predicates that it acquires reality and interest for the mind. Nevertheless this seems to be the point of contact between what is thought and what exists, and accordingly the misguided reasoning which imagines it can derive all knowledge from itself, often mystifies those who trust it with empty tautologies, such as, 'Being is; what is, is, and it is so because so it is.' As soon as the reason has recourse to Being, as the necessary support of all predicates, it abdicates its sceptre in favour of another source of knowledge,

which is able to accept and deal with realities. For bare Being can give no food for thought; the absence of predicates is the absence of any describable or cogitable nature, and here therefore the individual, the perfectly-determined but unknowable existence, enters again upon its rights. The individual alone really *is*. Hence the development of philosophy consists in a constant struggle between predicates and reality, or between thought and words, in so far as the latter assume to themselves equivalence with true, independent reality [1].

The energetic and victorious attack of Kant was the first which finally disposed of the idea of substance; but it should be remembered that Descartes' view of it marked an important stage upon the road to this goal. For while he assigned to it the widest predicates, which are taken for granted in

[1] The ontological proof of the existence of God, which occupied men's minds for so long, until its nullity was demonstrated by Kant, rests upon the delusion that existence in thought is identical with real existence, so that the latter may be derived from the former as its source. Substance, the Absolute, the *ens absolute necessarium*, the *causa sui*, *cujus essentia involvit existentiam*, are all only so many vain attempts to found existence upon thought, and to discover in the latter certain principles from which the world of reality may be deduced. These circular windings of human reason, this unprofitable trifling with its own creations, had been already condemned by Aristotle (Analyt. Post. ii. 7), τὸ δὴ εἶναι οὐκ οὐσία οὐδένι, '*Being* cannot constitute the essence of any existing thing.' Yet Aristotle himself believed that knowledge must start from Being or Substance. Hobbes seems to have been the first to protest energetically against this idea (Lev. cap. 46), and to have pointed to the root of the evil as lying in the confusion of words with things. 'Hobbes,' observes Lange, 'undoubtedly hits the right nail upon the head when he regards the hypostasising of the copula *is* as the source of countless absurdities. Aristotle made the word "Be" into a thing, as if there were some object in nature, designated by the word *Being*.' (Geschichte des Materialismus, i. 241.)

all thought, it became evident which were the citadels against which attacks would have to be directed. The multiplicity of substances had only confused the mind and given occasion to unproductive struggles; but when all external phenomena were treated as modifications of the one *substantia extensa*, and all internal affections as modes of the one *substantia cogitans*, a regular campaign became strategically possible, and secure of victory.

Descartes himself betrays in one place his consciousness of the emptiness and want of matter in the bare idea of substance, as well as of the task imposed on his philosophy of reducing still further the number of 'things in themselves.' The passage may be quoted on account of the connection with the Kantian doctrine, which here appears with especial clearness: 'Thought and extension may be considered as that which is constituted by the nature of thinking and material substance. . . . They ought then only to be conceived as the actual thinking and extended substance, i.e. only as mind and body[1]; in this way they are most clearly and correctly conceived. It is also easier to conceive extended or thinking substance than substance by itself without thought or extension. For it is somewhat difficult to separate the idea of substance from the ideas of thought and extension, as the distinction can only take place in thought, and an idea does not become clearer by having less included in it, but only by having what *is* included clearly distinguished from everything else.'

[1] Kant says exactly the same, only in inverse order, i.e. mind and body are only ideas of the inward and the outward sense, and therefore respectively, thought (or, according to Descartes, affections of consciousness) and extension.

'Thought and extension may also be regarded as states of substance, in so far, that is to say, as the same mind may have different thoughts, and the same body, without changing its mass, may be variously extended, sometimes more in length, sometimes more in breadth or depth, and again conversely. In this case they are modally different from the substance, and can be conceived as distinctly as it can, provided only they are not regarded as substances, or things distinct from each other, but as different conditions of the same thing. For inasmuch as we consider them in the substances whose states they are, we distinguish them from those substances, and discern what they truly are. If, on the other hand, we attempted to consider them apart from the substances in which they dwell, we should have to think of them as self-subsisting things and thus confound our ideas of states and substances.' (Princ. Phil. i. 63, 64.)

We see in all this the widening of the gulf between individual existences and universal predicates. In Spinoza it is completed, and all separate existences are swallowed up in substance. Leibniz will make the attempt to reconcile the rights of the former with the postulates of reason, and Kant will finally show that the gulf follows inevitably from the nature of thought, that there is an absolute distinction between the worlds of thought and reality, and that the two qualities assumed by Descartes to be alone truly real, and which he therefore exalted into substances, are after all only ideas of the subject, and therefore reducible to no other foundation than the Cartesian *cogito*.

5. We have above noticed Descartes' claim to recognition for having advocated the mathematical as

the only true method of interpretation for the phenomena of the external world, which in all cases have to be reduced to *quantitative* differences. It is well known that Descartes, like Leibniz, was a distinguished mathematician; the foundation of analytical geometry alone would have established his fame. It is not therefore surprising that his mind, when dissatisfied with the principles of metaphysics, should have turned with longing to physics and physiology for the interpretation of the world-mechanism, as it appeared in his grand and simple conception[1]. Here stern necessity rules with unbroken sway, and the visible relationship of cause and effect.

[1] Lange (Geschichte des Materialismus, i. 203) indeed maintains that Descartes attached less importance to the whole metaphysical theory usually associated with his name, than to his investigations in mathematics and natural science and his mechanical theory of natural processes. I must confess that I cannot share this opinion, which the passage quoted by Lange by no means seems to bear out. The passage in question (Discours de la Méthode, i. p. 191, Cousin) runs as follows: 'Although I was well pleased with my speculations, I believed that others had been not less well pleased with theirs. But as soon as I had attained some general notions in physics and on applying them to divers problems had observed how far they reached and how different they were from those commonly accepted, I thought I could not allow them to remain concealed, without a breach of that law which binds us to care for the general welfare of mankind so far as in us is. For these ideas have shown me the possibility of attaining opinions of great practical fruitfulness for the life of men, and that, instead of the speculative scholastic philosophy, a practical one may be established whereby the forces of fire, water, air, the stars, the heavens, and all other bodies around us may be known as clearly as the work of our own artificers, so that we may be in a position to apply them, like these, to our own purposes, and in this way make ourselves lords and proprietors of nature.'

What Descartes here announces in prophetic vein has been literally fulfilled. The high station now held by natural science,

The time had not yet arrived for the idea of causation to be tested and, together with the whole sum of mathematical knowledge, to be traced back to its real source. The idea of cause was looked upon as an unassailable possession, and the work of speculation seemed to be only to discover the corresponding members, and to connect each thing with its cause. We know that among the ancients Aristotle attempted to investigate and distinguish the various kinds of causes, but even he failed, as Schopenhauer[1] has pointed out, to reach a distinct consciousness of the important difference between material *cause* and intelligible *reason*. Aristotle however did good service by calling attention to the matter; he constantly appeals to the nature of knowledge, and treats the theory of perception as an important part of the task of philosophy. His distinction between final and efficient causes (*δύο τρόποι τῆς αἰτίας· τὸ οὗ ἕνεκα καὶ τὸ ἐξ ἀνάγκης*) remains a valuable possession of human thought, and with it the knowledge that real necessitating belongs only to the latter of these.

the vast transformation of practical life effected by its help, these only became possible through the strict application of the mechanical principle. And the latter is a philosophical idea, a fruit of Descartes' speculation. What he relies upon in this passage is the scriptural saying, 'By their fruits ye shall know them.' A philosophy which enables its adherents to solve large and difficult problems, establishes thereby strong claims to acceptance as truth. He himself says of explanations derived from his own main principles: 'Cum experientia maximam effectuum istorum partem certissimam esse arguat, causæ a quibus illos elicio non tam *iis probandis quam explicandis* inserviunt *contraque ipsæ ab illis probantur.*' (De Methodo, ad fin.) How vast has been the influence of Kant upon all the sciences! How little has the philosophising of Fichte, Schelling, Hegel, Herbart, and the rest produced except—empty words!

[1] Die vierfache Wurzel des Satzes vom zureichenden Grund, p. 8.

The multiplicity of the forms to which Aristotle ascribed reality, and especially his increasing preoccupation with the organic world in which adaptation is the rule, naturally contributed to facilitate the reflection.

It seems as if the mathematico-mechanical treatment of the phenomenal world constrains the mind to confess: there is but one kind of cause, or like the Schoolmen: 'Non inquirimus an causa sit, quia nihil est per se notius.' (Suarez.) This belongs to the special character of this source of knowledge, for in geometry, which starts with construction, knowledge and existence proceed at once from the same cause. The conception of the world as a single extended moving substance accustomed the mind to recognise everywhere similar compelling causes, admitting of no further investigation.

Fatal consequences followed from this prominent recognition of the mechanical necessity of all events, and the equally stringent intellectual necessity of mathematics, both for Descartes himself and his successors, especially Spinoza, as the various kinds of causes became confused and, e.g., reason was substituted for cause,—an error of which numerous and striking examples have been taken by Schopenhauer from Spinoza's works (loc. cit. p. 12–15).

Hence too the same kind of necessity which prevails in mathematical thought is transferred to all other reasoning, and mathematical constructions are applied to ideas that have a very different origin. An example is offered by the 'ontological proof' and the *ens necessario existens;* and as the keystone of his system, Spinoza asserts the mathematical necessity of events, because it follows from the idea of God that everything should necessarily happen as it does

happen, in the same way as it follows from the nature of a triangle that its corners should be equal to two right angles[1]. Hence too the attempt to clothe philosophical conclusions in mathematical forms which by no means suit them, an example set by Descartes in the Appendix to the Meditations, and followed, unfortunately, by Spinoza in his Ethics, where instead of allowing his ideas to express themselves with natural freedom, they are imprisoned in the apparatus of propositions, demonstrations, scholia, and corollaries.

For the rest, here too Descartes abandoned further metaphysical research, or investigation of the data of consciousness, in favour of mathematical truths, which he held to be derived, as eternal truths, from the will of God: 'I say it would be as possible for God to cause it not to be true that the radii of a circle should be equal, as it was for him to create the world.' (Epist. i. 110.)

At this point however Spinoza, in open opposition to his predecessor, energetically defends the rights of reason, observing: 'It is held to be certain that the judgments of God altogether transcend human comprehension, and this would suffice to make truth eternally inaccessible to mankind, if another norm of truth were not provided for them by mathematics, which do not inquire after ends or purposes, but after the properties and characteristics of figures[2].'

This assumption of a single, universal, strict causal nexus, such as the phenomenal world suggests to the reflective mind, leads necessarily to a one-sided and erroneous conception of the intelligible principle in the world. For although in this also laws and internal

[1] Spinoza, Eth. i. Prop. 17. schol. [2] Ib. i. Prop. 36.

necessity prevail, these are of a quite different kind from the necessity of nature. Every intellectual force struggles after freedom, and attains the same in proportion as it develops and spiritualises itself, and hence the highest kind of freedom known to us is that of human knowledge. The decisive principle then should have been found in this, and failing such verification, the natural consequence was a materialistic reaction, denying mind and conceding only natural necessity, and Spinoza's union of a causally determined substance at the same time material and intellectual.

THE MATERIALISTIC TENDENCY.

GASSENDI. HOBBES.

LANGE rightly indicates Gassendi and Hobbes as the revivers of the materialistic theory of the universe[1].

These two men, of whom the first was to some extent an antagonist of Descartes, while the latter attached himself to Bacon, were yet powerfully influenced by the new ideas, so that the materialism founded by them bears clearly the imprint of Cartesian thought.

The doctrines of Epikuros and Lucretius were brought up again by Gassendi (trimmed with a little Christianity as the taste of the time and his status as a Catholic priest demanded) and opposed in their clear simplicity to Aristotle and the Schoolmen. Gassendi is the founder of the modern atomic theory.

And wherein, we may enquire, does modern materialism differ from the doctrines of Demokritos and Epikuros?

To make this clear we must again revert to the materialism of antiquity and its relation to other systems, and especially to the opposition between Herakleitos and Demokritos.

Herakleitos, as we have shown, dwells upon the eternal change and motion in the One, which underlies all change (ὑποκείμενον), and places the rational

[1] Geschichte des Materialismus, i. p. 223 ff.

principle of unity in the foreground, while to nature and experience he grants only this eternal flux or change. Demokritos, on the other hand, conceives the many, the infinity, multiplicity and variety, that is to say the material principle of nature,—as the essential. Philosophically or rationally speaking, the sameness of nature among the infinite and manifold atoms, that is to say, weight and form, out of which all the various appearances given by sense-perceptions arise, is the only thing explained. The individual is the most important postulate with Demokritos, while according to Herakleitos and the Eleatics it is entirely swallowed up by the One. It corresponds with this contrast that Demokritos was regarded by the ancients as a great *polyhistor*, and himself boasts of the extent of his travels and the range of his experience[1]; while the significant saying, *πολυμαθίη νόον οὐ διδάσκει*, is ascribed to Herakleitos. A similar contrast meets us in modern philosophy, between Spinoza, the retired hermit who plunges into the abysses of pure being and despises the world of experience and empiricism, and Leibniz, the representative of individualism, the travelled and accomplished man of the world, and a writer admired for his universal genius.

The first expression of the mechanical theory of nature is to be found, as before observed, in the doctrine of Demokritos. All that happens follows from the pressure and impact of moved, i.e. falling, atoms in the void. A strict, unbroken causal chain, together with the character of necessity, predominates in this view, and hence in antiquity as now, the absolute necessarianism became associated with

[1] *Ἐγὼ δὲ τῶν κατ᾽ ἐμαυτὸν ἀνθρώπων γῆν πλείστην ἐπεπλανησάμην ἱστορέων τὰ μήκιστα.* Clem. Alex. Strom. i. p. 304.

materialism as its especial characteristic, though at the same time it was regarded as an unworthy infringement of what we feel to be highest in ourselves—our freedom and our responsibility. It is however a rigidly logical consequence from the thought that recognises only one kind of cause. And it must not be forgotten that this same necessity gives its only firm foundation to the study of nature, which has always to deal with appearances, and that without it there could only be a wild dance of atoms, nowhere law and order.

What stood in the way of the development of materialism in antiquity was that the doctrine of atoms was not connected with mathematics and so made to serve, as it is peculiarly adapted for doing, as the foundation of exact scientific research. The physical explanations of Demokritos and Epikuros are indeed often ingenious and acute, and remind us in many ways of modern views, but they remain in the region of hypotheses, because they despise or disregard observation and experiment and the numerical proportions to be learnt therefrom. Larger and smaller atoms, collisions producing vortices of motion or motion in the line of impact, fine, smooth spiritual atoms present in the pores of all bodies and emitted from every surface, hook-shaped atoms that attach themselves and the like, these are the only principles of explanation by which it is sought to elicit something general, that is to say laws, from something individual, which atoms certainly must be considered to be.

Thus it befell that the principle of necessity, in itself wholesome, precious, and rational, became transformed into another, seemingly opposite principle —that of chance. Demokritos' ἀνάγκη was at the

same time τύχη[1]. And in fact this desperate union must be entered upon as long as *number* fails to supply fixed points at which the individual can be brought under the general law, as long as falling atoms in continuous succession offer—it is true a chain of causes, but—no general principle of explanation for the thread of causation. Like Tantalos, human reason in view of the rushing stream of phenomena could only say: 'I see indeed necessity, but for me it is always accidental!'

As the product of remote antiquity this theory of atoms may claim our admiration, but important transformations awaited it at the hands of Baconian empiricism before it could come to life again after the deathlike rest of centuries, and then, in the mathematical era of Descartes, take its place in the front rank as an ally against the decaying Scholastic philosophy and its unfruitful trifling with ideas that exact science showed to be unfounded. Fertilised by experience, observation, and especially by the strict mathematical theory of Descartes, Atomism was destined to become the mould in which all vigorous speculation regarding the natural world was to be cast, and to render the most intricate, evanescent, almost imperceptible of phenomena at once clearly intelligible and comprehensible.

The idea of material substance as laid down by Descartes is combined by Gassendi with the idea of atoms. They are the permanent element, the form of the changeable. Another great advance was made by Gassendi's identification of the atoms' *weight*

[1] By both he denies the existence of any other than efficient causes, i. e. internal spiritual causation as well as final causes or ends. This should not be overlooked, as it is the ground of all our knowledge of nature.

with their proper motion, so that the long-lived error of imponderability, which lasted even to our own day, was virtually confuted, the erroneous theory of matter found in Descartes was rectified, and the true essence of all material existence, *motion*, was clearly apprehended. The atoms (created and set in motion by God) are the seed of all things, from them, by generation and destruction, everything has been formed and fashioned and still continues so to be. All growth and decay is but the union and separation of atoms. When a fagot is burnt, the aggregation of atoms is dissolved, and the atoms reappear in new forms and combinations as flame, smoke, ash, &c. It is plain that the preliminary conditions of a healthy system of physics and chemistry are contained in these views. It is also interesting to observe that Gassendi explained the fall of bodies by the earth's attraction, and yet, like Newton himself, held *actio in distans* to be impossible. He assumed in all such processes, as in magnetism &c., the necessary presence of some direct material intervention, a view which, however much it may run counter to contemporary opinion, will hereafter reveal its full truth and force in new and clearer ideas.

And here, not to overlook a transcendental forecast of Gassendi, it may be observed that he regarded space and time as something distinct from matter, *neither substance nor accident.* When all things end, Space extends into infinity; Time was before all creation, and flowed on then as now[1].

Hobbes limited the scope of philosophy to the mathematico-physical interpretation of natural processes. For him the whole of philosophy consists in

[1] Lange, Geschichte des Materialismus, i. 231.

that one region of it, circumscribed and marked off by Descartes.

'According to Hobbes philosophy is, 'Knowledge of effects or phenomena derived from correct conclusions about their causes, or the same knowledge of causes derived from their observed effects. The aim of philosophy is to enable us to predict effects, so that we may be able to utilise them in life.' Lange observes that this use of the word philosophy is so deeply rooted in English that it scarcely corresponds to what is understood by the name in other languages. A 'natural philosopher' has come to mean a student of experimental physics.

Admirable in itself, and in full accord with this definition of philosophy as the mere interpretation of nature, is Hobbes's discernment of the infinite simplicity of the course of human reason. 'All reasoning is calculation, and all calculation is reducible to addition and subtraction.' In other words, for the human reason, all qualitative differences reduce themselves to quantitative ones, the question is everywhere only of a more or less; a view agreeing exactly with that of Descartes.

In connection with the above we may note his superiority to the danger of deception arising when the human reason is entangled in verbal fetters, as in the case quoted above (p. 150, note), where he attacks the Aristotelian Being. He says of the Copernican theory, the truth and importance of which he unreservedly admitted, that it had been strangled in antiquity in a noose of words.

His utterances on the subject of speculative theology are also significant, and show that he had attained a clear view of the boundary line of transcendentalism. The connection between causes and effects leads

necessarily to the recognition of a *causa prima*, an ultimate source of all motion, only the determination of its being remains altogether unthinkable, as it contradicts the nature of thought, which consists in addition and subtraction. At this point, where reason is arrested, religious faith assumes her rights.

The onesidedness of materialism—that is to say the introduction of mechanical causation into regions where the mind has to be taken into account—reappears plainly in the political theories of Hobbes, to which he attached the highest importance. One cannot but admire the iron consistency with which the theory of rigidly mechanical causation is applied, and the way in which the statics and dynamics of single forces alone are recognised in what we are accustomed to consider the highest intellectual organisation—the body politic.

The state arises immediately out of atomism. It is remarkable that Hobbes does not even concede to men the social impulses or instincts of ants, bees, &c., and so rejects the ζῶον πολιτικόν of Aristotle. The state of nature for mankind is one of war. It seems as if he was dimly influenced by the thought that the rational principle, which obtains in the state, is something far higher than brute instinct, and that the absolute supremacy of the state, which is his ideal, is indifferent to sympathy, but allots to each his right, which indeed only comes to be right because of the might behind it. For right and wrong, good and evil, virtue and vice have no meaning in themselves; they originate in the political order, by the supreme will of the state. The *Contrat social* with him, as with Rousseau, supplies the original foundation for the state's constitution. Every man says to his neighbour, 'I convey to that man or this

institution my rights of self-government, on condition that you also convey to it the same rights over yourself.' Thus the omnipotent authority of the state rises out of atomism; the sole will that puts an end to the state of nature and establishes the kingdom of reason: 'hæc est generatio magni illius Leviathan, vel ut dignius loquar, *mortalis Dei*.' The state only punishes in order to maintain itself; religion or the fear of invisible powers are only political expedients.

It must be confessed that such a positive relationship between might and right, in which everything which the state ordains is good, reasonable, and sacred, while criticism, in the name of higher principles, is rejected as injurious to the commonweal—this view agrees perfectly with the simple materialistic, mechanical theory of the universe in which also nothing is recognised but the necessary working of real forces.

And the system of Hobbes is certainly the most complete expression of rigorous materialism. Its dependence on Descartes appears in the fact that he discerned the incompleteness of the Baconian empiricism, and by no means desired to restrict the activity of the mind to the mere analysis of sensible facts, but assumed, with Descartes, that the synthetic method should be applied in all cases, according the due place of honour to mathematics in the interpretation of nature.

According to Hobbes, there is only one substance, namely matter; an immaterial substance is a contradiction in terms. But matter as such, strictly speaking, does not exist, it is properly *bodies* that exist; realism and individualism thus meet, as they do in all genuine materialism. The idea of matter

is reached only by abstraction, it is only a *name* for the conception of bodies in general. The accidents of matter have no real existence, they are only the way in which bodies are conceived. The only reality is that which fills space and is coextensive with it. Extension and form are the only qualities without which we are unable to imagine bodies as existing; all other accidents, such as motion, rest, colour, hardness and the rest, may change. Such change however is only an alteration in the representation given by our senses, the *quantum* of the body continues unalterable. Here however we are constantly deceived by the counters of our verbal currency, which lead us to imagine that something quite different is before us, that from one thing another quite different has been produced. In fact all change is simply motion, or change of place among the component parts of the body.

We have here the subjective representation; the part of the subject in the perception of things is set forth strongly for the first time, an idea which, rendered possible by Descartes, leads through Locke to the final investigations of the Kantian Critik. And in this Hobbes not only rises above materialism, he points, unconsciously, to a fixed point from whence it will hereafter be upheaved and destroyed. It is only necessary to bring together the various conclusions he maintains, and this will become irresistibly plain: 'Matter is nothing real, but a general notion derived from the principal qualities of bodies. The accidents do not belong to body as such or in itself, they have no objective existence, but are *the ways in which our senses are affected by bodies.* Even the ideas of substance and accident depend ultimately only on our arbitrary conception,

and the linguistic determination of ideas, i.e. words: they are throughout relative. If we say, here a new thing has come into existence, we make use of the mental form of substance; if, on the contrary, we judge that a pre-existing body has acquired a new quality, we still remain within the limits of the conception of accident.'

These few sentences are enough to show the admirable intellectual vigour of the English thinker and the extent to which he was in advance of his age. The knowledge of the dependence of thought on words, the importance of which is even still too generally neglected, would alone suffice to stamp him a great thinker. In all the sentences above quoted there are germs and intimations of the Kantian Idealism; it may even be said that the idea of *substance* was already partially divested of its reality and assigned to the sphere of the subject; but Hobbes pursued his conquests no further, he thought that the task of philosophy was accomplished with the completeness of realism, and to him nothing was real but *bodies and their motions*.

Thus, throughout his description of perception, he does not concern himself about what is internal in the process, i.e. the sensitive subject, his only object is to bring this branch of phenomena to take its place logically in his system of complete Realism. Hence he regards all sensible perceptions as movements of infinitely small atoms that act upon the organs of sense and cause reaction in them. From this resistance there arises the disposition to conceive the object as something external,—'ex ea *reactione* aliquamdiu durante ipsum existet phantasma, quod propter conatum versus externa semper videtur tanquam

aliquid situm extra organum[1].' What a simple solution is offered here of the psychological problem of the externalisation of our mental representations, which in our time has been so obscured by mystical rhetoric! 'Sensible qualities thus do not belong to things, i.e. bodies in themselves, but only exist subjectively. Light and sound are only motions of minute particles, which are perceived by us, and they can only be perceived by us because they produce analogous movements in the particles of our organism,—for like can only act upon like, and objects in motion only upon moveable objects,—and it is only our resistance, reaction or counter movement which leads us to refer the effect to an external object as its starting-point.

It will be seen from this explanation how much Hobbes assigned to the thinking and feeling subject, viz. the sensible affections with their qualitative variations, the apprehension of the different accidents of things, and of the difference between substance and accident, analysis and division, synthetic conclusions and conjunction;—he passes by all this indifferently, and so far as appears treats it as the plainest thing in the world, while all the time he was on the verge of raising the question, how it comes to pass, for instance, that the subject takes the various accidents of things for essential qualities of things, if not indeed for things in themselves.

This follows however from the rigorous carrying out of the one mechanical principle from which everything was to be derived and by which everything was to be explained. Only one kind of cause was recognised; the old difference between the phenomenal and the real world of rational thought was

[1] De Corpore, iv. 25.

again brought out, and the world of moveable matter —or rather of moving bodies—was declared to be the true real world, in so far as its determination was calculable arithmetically or mathematically, so that the highest product of reason was necessarily the *self-knowledge of matter in motion.*

It is indubitable that the spirit of this doctrine is directly descended from Demokritos and Epikuros, but it is also certain that the spirit of Cartesianism has penetrated and fertilised it, so as to make it for the first time philosophically productive.

Modern materialism is mathematical. While in antiquity mathematics were only applied to astronomy and mechanics proper, modern science has extended this principle, as the only valid one, to all natural phenomena, since all have to solve mechanical problems; so that the prophetic utterance of Descartes has been fulfilled, that the powers of remote celestial bodies and the mysteries of organic nature might be made as intelligible as the handiwork of mechanics and labourers.

But meanwhile the law of necessity comes more and more into the foreground; for in proportion as the hidden mysteries of nature are laid bare to the scientific eye and proved to be mathematically reducible to the simple element of mere forms of motion, in the same proportion the mind learns to recognise everywhere order and regularity, the supremacy of simple natural laws, which are the same in every time and place. It is thus enabled to extend the chain of causation forwards into the farthest corners of space, backwards into the remotest past, by the light of science to look forward into the events of future ages and to determine confidently what befell millions of years ago, before any human spirit breathed or

the foot of any rational being had trod the face of earth.

Thus Demokritos' chance (τύχη), by means of science and for scientific purposes, turns more and more clearly into necessity (ἀνάγκη).

But to see through this necessity and to discern that it lay in the nature of knowledge itself, this was reserved for the greatest of philosophers, for it required the sagacity of a Kant.

THE IDEALISTIC TENDENCY.

GEULINX. MALEBRANCHE. BERKELEY.

THE starting-point of Cartesian philosophy was emphatically idealistic, its progress throughout realistic. The transition from one to the other was accomplished—not to say necessitated—by means of the idea of God. The keys of true knowledge, true understanding of the universe, bestowed by the Deity upon mankind are the *æternæ veritates*, and among these we must understand more especially mathematical knowledge. Only what man discerns in this way, and with this help *clare et distincte intelligit*, that alone bears the stamp of certainty, everything else is exposed to the illusions of sense and uncertainty.

We have seen how materialism erected its system upon the base of certainty thus indicated by Descartes, without troubling itself further about the premisses from which this proof of certainty was derived by metaphysical reasoning.

It might have been foreseen that other minds would occupy themselves anew with these premisses, and attempt a profounder and more consistent development of the foundations of the Cartesian system. Among these minds, Geulinx and Malebranche call principally for remark.

One is accustomed to associate the name of Geulinx with the thought of *Occasionalism*, the attempt to overcome, in a way more satisfactory to the human mind, the difficulties created by Descartes in his

separation of mental and physical processes. For, notwithstanding the hypothesis of divine co-operation, the mutual influence (*influxus physicus*) remains incomprehensible. Hence nothing remained except to make God the real author of all mental and bodily changes. On the *occasion* of a bodily process, God calls up an idea in my mind; on the *occasion* of an act of will, God causes a corresponding movement in my body.

But this interesting thinker really deserves most attention for his attempt to erect a new theory of knowledge on Cartesian principles, and to trace direct to the primitive spring of consciousness some things which Descartes had only thought it possible to explain by his theory of divine intervention [1].

Descartes had derived the truths of mathematics, upon which all clear and distinct knowledge rests, as Plato had derived his Ideas, wholly and solely from the will of God. The pure thought, made possible by mathematical ideas, which was contrasted with sensible representations (imaginatio), makes use of these ideas because it has been so ordained by God. Even in regard to our most primary perceptions, e.g. that $2 + 3 = 5$, we might become the victims of a supernatural delusion effected by a malignant spirit.

In the same way that it had been objected against the reality of the Platonic ideas that they stand to each other in a relation of superiority and inferiority; in the same way Geulinx pointed out with regard to mathematical notions that they stood in an order of logical dependence, one of them being derived from another, whence it followed that all alike must be

[1] Cf. Ed. Grimm, Arnold Geulinx' Erkenntnisstheorie und Occasionalismus. Jena, 1875.

deduced from the nature of our thought itself. He instances several truths which could not be altered in any way by the will of God, e.g. that A = A. Such truths are the foundation of all mathematical demonstration. To maintain the falsehood of the proposition 2 + 3 = 5 is to maintain that the meaning of two and three does not equal the meaning of 2 and 3, in other words, that A is not equal to A; to admit the possibility of the radii of a circle not being equal is to admit that the straight line, by the revolution of which round one end the circle is formed, is not equal to itself. Such truths as these are antecedent to the will of God; they follow from his nature and his intellect. 'These truths,' says Geulinx, 'have their seat in our understanding, in so far as our understanding is in harmony with the divine, when we perceive them in God, and God after this manner.' Here plainly the origin of innate ideas is referred to the nature of the intellectual faculties, instead of to the will of God, which in itself is a material step in advance.

In regard to the definition of matter also, Geulinx endeavoured to attain a higher degree of clearness than Descartes, whose weakness on this point has already been noticed. If space and matter are the same as to their essence (extension), how can they be distinguished by us? And how, on the other hand, can they be identical when space is infinite and indivisible and matter finite and divisible? There must be a certain process of thought by which I produce the idea of matter, as a mode of the innate idea of space, from this idea itself. It is accomplished by a kind of abstraction, the nature of which Geulinx professes himself unable to define.

Equally fine observations concerning the nature of

consciousness are to be found in Geulinx. All the definitions that may be given of mental processes do not deserve this name; they occur really by means of a figure, metaphor, or comparison. 'Quid sit amor, dici non debet; res ea nobis per conscientiam et intimam experientiam quam notissima est. Et id generatim obtinet in iis omnibus, quæ ad cogitationes nostras, ad intellectum atque sensum, voluntatem item et animi affectus pertinent; hæc enim omnia nobis, ut dixi, per conscientiam notissima sunt, nec possunt unquam definitione ulla declarari[1].'

There is even in Geulinx a foreshadowing of the doctrine of Schopenhauer, that what appears in our imagination as external motion, is internally will: 'Hæc actio (qua membra nostri corporis movemus) nihil aliud est quam *volitio*, sentimus nempe et clarissime nobis conscii sumus, hoc solo membra nostra moveri (in quorum scilicet motibus imperium habemus) quod moveri ea velimus, licet interim ignari simus quo modo motus ille fiat.' Here occasionalism falls quite into the background, which elsewhere rests upon the erroneous assumption that an activity can only be exercised by one who discerns how it originated, upon which God is introduced as the *summus opifex*.

Another very welcome feature is that Geulinx is the first among philosophers to feel called upon to vindicate the rights of the much contemned and abused senses, which had been degraded into mere nothingness, or at best into a handmaiden for the more distinguished rational cognition with which, as alone true and valid, it was always being contrasted: 'There can be no doubt as to which is in itself the true world, the world of pure thought or

[1] Ed. Grimm, loc. cit. p. 14.

that of sensible perception. Which however is the more beautiful, the more honourable of the two? I find few qualities in that world which, as the truly existing, gives occasion for the existence of the other. There is no change but that of motion.' How far otherwise in the world of our senses! Here I behold the light of the sun, the blue heaven's vault above me; the flowers deck themselves out in all the glory of their varied colouring, I listen to the soughing of the waves, the murmuring air, and clamour of the storm. No doubt this world is the fairest, the most worthy of its divine author! We gaze with admiration upon the Deity, whose unspeakable magic takes occasion of our bodily motions to call up this world in us; and we look up to him with still deeper admiration when we discern the spell running through this God-created nature. The world of ideas resembles a dry treatise; the world of sense, on the contrary, a poem of phantasy[1].' (Phys. Vera, Introd.)

Still more important are the investigations initiated by Geulinx, in which, it may really be said, that he approaches the Kantian conception of the problem of knowledge. Amongst these must be placed first of all the question, whether there can be any knowledge of things apart from the forms of our thought, that is to say, in Kantian phrase, any knowledge of things in themselves? Such a question, uttered for the first time, breathes the whole spirit of modern philosophy. Geulinx's answer to the question runs as follows: 'When we think and judge—for judgment is the soul of thought—we use a subject and a predicate. The subject must be conceived, by means of a fundamental internal faculty of our mind, which cannot be further defined, as a *Being* (ens). I conceive

[1] Ed. Grimm, loc. cit. p. 48.

the thing thus contemplated as one, by including all its parts, and excluding the thing itself from everything else. This unity does not belong to, e.g. a table as it is in itself, but is completed only in our mind (totatio). We must further ascribe the predicates to the subject, i. e. we must declare something about it. Every subject only becomes a subject when it is conceived as being (ens). This is the *nota subjecti*. When we add this note to an adjective, it becomes a subject (the good, the sweet): when we subtract this note from a substantive, it becomes a predicate (the man is a judge). The great question concerning substance and accident thus reduces itself to the grammatical distinction between substantive and adjective.' Such a sense of the dependence of our thought upon the forms of speech betrays a profound insight into the nature of knowledge and perception.

'But how does it happen,' he asks further, 'that certain qualities are chiefly indicated by substantives and others by adjectives? The distinction seems to have arisen because certain things appeared permanent and durable, such as bodies, and others again more fugitive and variable, such as heat and cold, light and darkness, colour and sound. Out of the durable ones in the first instance substantives and substances were formed, and out of the fugitive and changeable ones adjectives or accidents. But the distinction itself proceeds wholly from sensible perception, by which the human mind is almost always governed, so that the distinction is accepted in our thought as something actually existing. Thus nothing appears more permanent to our sensible perceptions than the body; the mind however altogether eludes their glance. And therefore we need not be surprised

that there have been people who held the soul to be an accident of the body, and characterised man as a '*corpus animatum rationale*[1].'

Credit has already been given to Hobbes for having divined that the true source and form of thought was to be found in language, and the same praise, only in yet higher measure, must be conceded to Geulinx. It was reserved for the present age and the rapid strides which comparative philology has made in it to discover the immeasurable importance of the study of language to all sound philosophy. But honour and admiration are none the less due to the first heralds of the scarcely dawning day. Geulinx made use of the new knowledge to drive the countless categories and petrified notions of scholasticism out of the field. The two real forms of thought, to which everything is referred, are those of Substantive and Adjective, or Subject and Predicate. He says in express terms that his opponents (the Aristotelians) were indignant 'at seeing their highly praised metaphysical chrysalis appear in its perfect form as *pure Grammar*. But they need not be ashamed of this science; indeed there is nothing more worthy of a philosopher than this same grammar, for it is the *science of the most primary and universal forms of thought*[2].'

By the help of these premises, the main question, as to the possibility of a knowledge external to the forms of thought, answers itself. Knowledge necessarily declares something about things, and therefore must be clothed in words. But as soon as the understanding conceives any object as a something, it has already invested it with the form of its own thought, that of the subject. The predicate and copula are

[1] Ed. Grimm, loc. cit. p. 61.

[2] Id., loc. cit. p. 63.

introduced in the same way, and thus the forms of two mental activities are applied to the thing. In other words, no knowledge of things is possible outside the forms of thought.

Reason is superior to sense. Knowledge of things, apart from sensible perception, only becomes possible by means of a higher faculty, which brings them before us, namely, reason. If there were a still higher faculty than this, we could reject all rational as well as sensible knowledge and rely only upon it. But no such faculty exists, and we must therefore conceive things under the mental forms of our reason; for things in themselves can never become the objects of cognition.

This view itself is valuable, and will preserve us from many errors. If I see a stick in water as bent, there is no error about the fact; error only begins when I maintain that the external reality corresponds to my sensible perception. And similarly, men are not in error so long as they conceive things in the forms of human thought, but only when they ascribe these same forms to the things in themselves. To conceive the things under these forms is a necessity which the wisest cannot escape, but he may refrain from judging the forms to pertain to the things in themselves, and herein indeed his wisdom consists [1].

We see in all this a worthy prelude to the Kantian Critik of pure Reason; the same clearness and caution, the same method, the same insight that all human truth and certainty must be derived from reason, that the task of philosophy is to establish the limiting conditions of this faculty, and that human knowledge cannot attain to the discernment of things in themselves.

[1] Ed. Grimm, loc. cit. p. 66.

Geulinx restricts his criticism to the forms of judgment, which in themselves are empty and insignificant in his eyes; and side by side with them he allows innate ideas to subsist, treating these throughout as *substantial*. And hence he repeatedly maintains, that although we can only know in accordance with the forms of thought, and must translate everything into these forms, still body and mind are self-subsisting objects, or substances:—a contention which enables us to measure the depth of the abyss into which Kant still had to plunge to rescue truth.

Malebranche may be dealt with more briefly. His penetrating mind too felt oppressed by the unmitigated opposition of the two substances as presented by Descartes. He too rejected as inconceivable the *influxus physicus*, since mind could never act on matter, nor matter on mind. Schopenhauer however is right in observing that he forgot that the *influxus physicus* had already been assumed in the creation and government of the material world by a spiritual God.

Malebranche's attempt to reconcile the two opposites is inspired rather by the spirit of Platonism than that of mathematical science. He enquires, how the mind attains to ideas of material things and of an external world existing independently of itself? For it is certain that what is conceived by the intellectual nature must itself be of a spiritual kind, belonging to the forms of consciousness: the material can never act on the immaterial. But what causes the soul to ascribe reality to ideas, or reality to enter the soul in the form of ideas? The view is here clearly that of Plato, combined with the Cartesian limitation to subjective consciousness and the two sole substances.

Malebranche seeks his solution by regarding the

substantia cogitans as a whole, apart from its connection with the material world; for as the *substantia extensa* subsists throughout space in a constant, indestructible relationship of material interaction, in the same way an inward, uninterrupted connection of cause and effect binds all intelligences to the *causa prima*, i. e. the Deity. The Deity then is the Absolute, Intellectual Substance, the thinking Principle which bears and comprehends all ideas within itself, and beholds and knows all things as they essentially are. The human soul only attains through this medium to the knowledge of things, and so to the conception of an external world. 'We see everything in God: God is the place of spirits.'

We see here not only the affinity with Plato, but also a sincere attempt to reach a logical and satisfactory solution by starting from the Cartesian premises. At the same time, in a way rather dangerous to the Christian opinions of the author, the individuality of spirits is swallowed up in the absolute, intellectual abyss of the Godhead; the path he has entered upon could only lead, if followed further, to Pantheism.

In general it may be observed that Pantheism was not easily avoidable according to the principles laid down by Descartes. In proportion as the idea of substance was extended and made more and more to include all reality, it attained to a unity of nature, which, though it did not indeed exclude the mutual determination of parts, postulated a complete unconditionedness for the whole, from whence everything else was to result as from the *causa prima*.

The view of Malebranche recurs again in the doctrine of Spinoza, and there, as we shall see, leads that generally profound thinker into a labyrinth, where

he wanders in obscurity without finding any outlet for himself. Thus he says, in the fifth proposition of the second part of the Ethics, that the formal existence of ideas has its cause in God alone in so far as his nature is intellectual, but not in so far as he is conceived under any other attribute. 'That is to say,' he adds explanatorily, 'both the ideas of the divine attributes, and those of individual things, are caused, not by their objects, or the things represented, but only by God in so far as he is an intellectual being.' This is quite the course of thought seen in Malebranche: 'Nous voyons tout en Dieu.'

The efforts of the two above-named thinkers to reconcile the idealistic and realistic points of view broke down in the same way as Descartes' explanation. There is no method by which we can combine in the idea at once all that it has been assumed as excluding and as containing; but there always remains as a last resource an appeal to the Deity by whose intervention all impossibilities are rendered possible. Both Geulinx and Malebranche endeavoured so far as possible to lighten the labours of Divinity, to leave as few impossibilities as possible to be so accounted for, and accordingly to allow more for human consciousness and intelligence. They were in this more consistent Cartesians than Descartes himself, and pursued the road he had so boldly entered upon for another long stage in advance, before they too gave way and began to resort to a supernatural explanation of the connection between the material and the immaterial world. The road of both was that of Idealism, but they did not pursue it to the end. This was reserved for another thinker, whose work must be noticed here because of its relation to theirs, although he belongs to a later date

than Spinoza, Locke, and Leibniz, and was to a certain extent influenced by their speculations. This thinker is Bishop Berkeley (1684–1753).

Schopenhauer observes[1]: 'Berkeley, although later, and knowing Locke, followed the track of the Cartesians to its furthest logical conclusion, and so became the author of the only real and true system of Idealism, which maintains that the extended matter filling space, i. e. the sensible world in general, can have no existence as such except in our mind, and that it is absurd, indeed contradictory, to ascribe to it as such an existence outside our thought and independent of the knowing subject, and consequently to assume the existence of a self-subsisting matter. This profound and just notion constitutes the sum and substance of his philosophy. He has hit upon and clearly distinguished the ideal element, but the real escaped him, indeed he concerned himself little about it, and only offers occasional, partial, and incomplete utterances on this subject. The will and omnipotence of God is the direct cause of all the phenomena of the perceptible world; that is to say, the real existence of all the objects of our thought is attributable to knowing and willing beings only, such as we are ourselves, and therefore these together with God make up reality. They are spirits, that is to say, knowing and willing beings; for he maintains will and knowledge to be inseparable. He has also in common with his predecessors the belief that God is better known than the apparent world, so that any reference to him appears as an explanation. It may be that his clerical and episcopal status imposed too heavy shackles and limited him to a narrow range of thought, beyond which he was

[1] Parerga und Paralipomena, i. p. 14.

on no account to stray. Hence he could make no further way, and the true and the false had to keep house together in his brain as best they might. This applies indeed to the works of all these philosophers, with the exception of Spinoza.'

The matter may also be stated in the following way: According to Descartes, the highest *a priori* idea is that of being or substance. He did not originate the contrast between thought and being, whence the salutary distinction between objective and subjective existence has been derived, but he dwells only on that between thought or consciousness and material extension. He attributed being equally to both, hence his *substantia cogitans* and *extensa*. His two successors, Geulinx and Malebranche, remained at the same standpoint. Berkeley was the first to doubt the reality of extended, material substance, and indeed to transfer all things into the realm of mind, and to explain all ideas of external objects as products or even functions of the latter. And this alone is true idealism, the logical development of the fundamental truth of Cartesianism; and at the same time the overthrow of Cartesian dualism, by the substitution of *Henism*—the assumption of but one kind of substance.

The salutary effects of the Berkeleyan train of thought, together with its weaknesses and onesidedness, may be easily summed up. Its merits are: 1. That the idea of substance—at least on one side—was completely done away with, and the fallaciousness of the inference was shown, which concludes from affections and representations of consciousness to actual things existing outside consciousness, and then attributes equal reality to these. The cumbrous legacy of scholasticism, the idea of substance, with

which Descartes and his successors were weighted, was at least diminished by half.

2. Chief stress was laid upon the point towards which modern philosophy was first directed by Cartesian insight, and from whence alone sure results are found attainable, namely consciousness, or the thinking mind. A criticism of the processes of consciousness might lead ultimately to an explanation of how and by what right this consciousness assumed the existence at the same time of its own ideas and of external objects corresponding to them. And from this point of view Berkeley also may be reckoned among the precursors of Kant.

But the onesidedness of this theory is at least equally self-evident. When Berkeley makes consciousness create everything out of itself, and in a certain sense, spin everything out of its own substance, the gates are shut upon experience. The growth and genesis of ideas, which contradict themselves, are in conflict with and eventually neutralise each other, and yet all lay claim to correspond more or less with an existing reality outside ourselves,—all this becomes wholly incomprehensible and unintelligible. Berkeley, like all his predecessors, is obliged to take refuge with the Deity, who is the true author of all mental processes, by which these ideas are called up in our minds and made to follow each other in orderly sequence. The only difference between his doctrine and that of Geulinx and Malebranche is that, according to the latter, the material world, which by the divine co-operation we think of as real, does also actually and really exist, while according to Berkeley it is a mere phantasm.

Berkeley's theory is the direct opposite of materialism. As the latter assumes matter to be the only

self-subsisting reality, so Berkeley assumes mind or consciousness. The being of matter consists only in its being presented in thought. Esse = percipi. And it is not to be denied that if the choice lay only between these two extremes, the spirit of Cartesianism and of modern philosophy would allow the claims of the latter view to the larger share of truth, for consciousness alone is directly given and certain.

And yet Berkeley too is unfaithful to the true starting-point of the Cartesian philosophy, which consists in the conscious Ego, the thinking subject. The idea of substance, from which he has freed himself on the material side, still holds him prisoner upon the other, immaterial side, and forces him into illogical conclusions. For if true being consists only in being perceived, by what right can my consciousness assume the existence of beings distinct from myself, but able like me to think, imagine, and will? How can I ascribe actual reality to them, or even to the Deity, since I have no assurance of their existence save from my own thought and imagination. Must we not, with strict remorseless logic, apply also to the existence of these spiritual beings the doctrine that the ideas of the conscious subject have no reality outside his consciousness? Must not the well-known utterance of the mystic poet be recognised as full and valid truth:—

'Ich weiss, dass ohne mich Gott nicht ein Nu kann leben,
Werd, ich zu nicht, er muss von Noth den Geist aufgeben.'

ANGELUS SILESIUS.

After all, Berkeley's chief merit consists in his having been the first to give utterance to the fundamental truth of idealism, which Schopenhauer, at the beginning of his chief work, has formulated as follows: 'The world is my idea — this is a truth

which holds good of every living and knowing being, although man alone is able to reach a reflective abstract consciousness of it: and if he really does so, he has already attained philosophical discretion. It will then be clear to him that he knows no sun, no earth, only an eye which sees the sun, a hand which feels the earth; that the world which surrounds him is only there as thought, that is to say, only in relation to something else, namely, the thinker, he himself. If there is any truth that may be enunciated *a priori* it is this.... The subdivision into object and subject is the only form under which any kind of mental representation whatsoever, abstract or intuitive, pure or empirical, is generally possible or thinkable. No truth is therefore more certain, more independent of any others, and less in need of demonstration, than this: that everything which exists for our perception, and therefore the whole world, is only object in relation to the subject, intuition in relation to the intuitive mind, in one word, Idea.'

'This truth is in no way new. It was involved in the sceptical considerations from which Descartes started. But Berkeley was the first to give it decided utterance; he has won thereby undying fame in philosophy, even though the rest of his doctrine cannot be maintained[1].'

[1] Schopenhauer, Welt als Wille und Vorstellung, i. p. 1.

THE MONISTIC TENDENCY.

SPINOZA (1632—1677).

We have seen how the unreconciled and irreconcilable elements in the Cartesian dualism ended in leading by a double road to *Henism*, according to which *either* matter or mind, *substantia extensa* or *substantia cogitans*, had the right to existence alone conceded it, while the other side was either ignored or treated with indifference, as for instance when the mind was regarded as an accidental affection of matter, or the material world as the product of the intelligent consciousness.

Materialism reposed contentedly upon the couch prepared for it by Descartes, a strictly causal, mechanical theory of the universe; and its rest was untroubled by the alarming certainty that matter, extension, number, cause, in short the whole real and palpable external world, necessarily presupposed a sensitive and intelligent consciousness, without which it could have no existence for mankind.

As soon as this truth began to force itself irresistibly on the minds of serious and conscientious thinkers, they sought with despairing energy to find in their one acknowledged principle some *point d'appui* towards the other side, an endeavour in which they naturally shared the fate of the archliar Münchhausen, when he tried to lift himself and his horse out of the morass by his own pigtail. Among these impossible attempts may be reckoned

the problem proposed by Hobbes (simply repeated with variations by Lange[1]) and characterised by him as one of the highest and most important that can occupy the human intelligence, 'What kind of motion can it be that produces the feeling and imagination of living creatures?' One might as well ask: 'How

[1] Geschichte des Materialismus, i. 237. Cf. the passage quoted above, p. 41, note. Whenever Lange gives expression to the opinion that the processes of thought and sensation 'may be explained as a special occurrence arising out of universal mechanical natural necessity,' he falls into that same materialistic self-deception. It must however be acknowledged that in many, nay in most passages, this excellent writer fully recognises the infinite difficulty of the problem, and points to the direction in which the solution must actually be sought. Resolution to follow this path indeed failed him. Thus when speaking in blame of Aristotle, who elevated his *forms* in transcendental fashion into causes of motion, and thus struck a fatal blow at the root of the study of nature, while Demokritos had been on his guard against following these clues into further metaphysical depths, Lange observes: 'Here the Kantian Critik of Reason was needed, to cast a first faint ray of light (!) into the abysses of a secret, which is still, after all the progress of natural sciences, as profound' to-day as it was in the age of Demokritos.' (Ib. i. p. 19.) Another crude expression of the materialistic prejudice is to be found in Dubois-Reymond's 'Grenzen des Naturerkennens,' p. 34: 'The theory of descent, taken together with that of natural selection, forces the idea upon the student, that the *soul has come into existence as the gradual product of certain material combinations.*' To exhibit still more clearly the helplessness of modern science in the face of the dualism which seems innate in human nature, it may be noted that Ueberweg is driven to the assumption that 'the law of the conservation of force will reappear in psychical processes,' until at last in a letter to Lange he resigned himself to the despairing confession: 'If you can help me out of the strait I shall be your debtor indeed; but it will not be enough for you to show me the improbability of what I myself see to be very little probable in itself, but you must open some other outlook to me, that shall at least strike me as moderately plausible. *I know no such.*' (Lange, loc. cit. ii. p. 518.)

much thought and imagination will suffice to set a mill-wheel or a steam-engine in motion?'

Spiritualism too needed equally to be inspired by a stronger faith than that which removes mountains, in order, after scornfully rejecting 'that stupid thoughtless somewhat' known as matter into the realm of nothingness, calmly to resist the stormy force with which the outer world proclaims its existence every second, and to transform the whole content of knowledge into an airy appearance, or a mere dream with which a cunning magician mocks our slumbers.

But the very stress of compulsion, which drove such distinguished men to such extravagant extremes, shows of itself the enormous difficulty and perplexity of the problem, and should lead us to more modest criticism of the Cartesian dualism than is usually indulged in.

There was only one other path left open, and this was trodden by Spinoza, that namely of endeavouring to restore to its original natural unity what had been separated in thought. In this human reason returned to its first instinctive conviction, but the newly-won truth was really something quite different. For there are always three stages visible in the progress of human reason, from confounding to distinguishing, from distinguishing to comparing, and from comparison to the establishment of a higher unity. On this subject Geiger observes[1]:—

'The human reason pursues its course forwards and sideways, and often returns upon the point from whence it started, only with a change: so that when its action seems to have become the same as before,

[1] Ursprung und Entwickelung der menschlichen Sprache und Vernunft, i. p. 91.

there is a difference in its mode of performing the same operation. Man strides from belief through doubt to knowledge, and often after a long course of experience he reaches the goal of convictions which were taken for granted from the first by the unthinking. And yet this circuitous course cannot be looked upon as superfluous, for its accomplishment leaves the mind enriched with the boon of *consciousness*.'

Thus from the earliest times mind and body were held to be one and the same, and if the sight of death made it necessary to assume a separation, the surviving soul was still imagined with a new kind of material existence, a body only of a finer and more airy substance, in which the spirit dwelt as before, and wrought good or evil to those left behind. Hence Ancestor or Manes worship. The busy and fertile fancy of the earliest races was also penetrated with the conviction, that all the powers of nature, which we now class as soulless, such as clouds, storms, rivers, sea and sky, were all living, conscious beings like ourselves, only immortal and furnished with superior might: hence mythology and polytheism.

But it was another and far harder task to reunite what had been sharply separated and distinguished by Descartes, in conformity with the general opinion of many centuries.

Spinoza himself indeed was not altogether without precursors, and among these has rightly been reckoned the profound Pantheist, Giordano Bruno (b. 1550, burnt 1600), who in high poetic flights divines again a soul within the universe, and instead of regarding matter as something merely passive, or in Aristotelian phrase, as the bare possibility of becoming, maintains rather that everything proceeds from it and is pro-

duced by separation and development: 'and therefore matter is not destitute of the forms, but, on the contrary, contains them all; and as it unfolds what has secretly been borne within it, it appears in truth as the whole of nature and the mother of all that lives.'

But we must not forget the distance from these essays in which emancipated thought first tried its wings, under the stimulus of the Copernican theory of the universe, between the profoundest conjectures of a Giordano Bruno, a Campanella or the like, and the pupil of Descartes, trained in the strictest discipline of mathematical thought, and fully conscious of the difficulty of the problem before him; recognising on the one hand the strict mechanical dependence or irrevocable antecedents of all material change, and on the other the irreconcilability of the latter with that other kind of causation which we meet with in our own consciousness, and which is more certain, that is to say more primitive, than any other. No doubt Spinoza would have remained faithful to Cartesian dualism but for the logical necessity which compelled him to perceive a gap in his master's system, an internal contradiction, a false deduction from imperfectly defined or conceived ideas. This, together with the revolt of those secret convictions which rest upon the common sense of mankind and for which a philosophical foundation had been laid by the Humanists, and even some free-thinkers among the Schoolmen, e.g. Pomponatius, who denied the immortality of the soul and disclosed the inconsistency between the idea of the divine omnipotence and human free-will,—this all combined to show him the urgent need for some correction of or some point of view beyond the former doctrine.

It is again the idea of substance from which everything is to depart and into which everything is to revert. As we see, this idea embraces, according to Descartes, the whole of existence; and by a fallacy, a violent transition from the imagined to the actual, the character of *necessary* existence is added to it. Now Spinoza raises no objection to this necessity, on the contrary, he accepts it as a starting-point, observing: 'Per substantiam intelligo id quod in se est et per se concipitur,' after this idea has already been introduced as *causa sui;* of which it is said, 'per causam sui intelligo id cujus *essentia* involvit *existentiam;* sive id cujus natura non potest concipi nisi existens.'

But Descartes, while including all existence under the idea of substance, at the same time distinguished two kinds of existences, to both of which the honourable name of substance was to be accorded. The philosophical conscience of Spinoza revolted against this. It is impossible, he held, that existence should be one, and then again at the same time two; there can only be one substance, which is by nature eternal, infinite, indivisible, and furnished with infinite perfections, i.e. qualities or attributes. This substance he too calls *Deus,*—though most frequently with the addition *sive natura,*—and of this it is said, 'Præter Deum nulla dari, neque concipi potest substantia' (Eth. i. Prop. 14); and again, 'Quidquid est in Deo est et nihil sine Deo esse neque concipi potest' (Prop. 15). This God is the immanent cause of all things; his existence and his essence are *unum et idem* (Prop. 20).

Philosophical speculation is here straining towards the same heights as the Eleatics sought for, the eternal, unchangeable one (ἓν καὶ πᾶν). But here too

there is a wide difference. The Eleatics acknowledged unity as the rational principle, but were unable to proceed from it to the manifoldness of the world, and hence the phenomenal world was disposed of offhand by Parmenides as the 'not-being,' while Zeno pointed out the inner contradiction into which reason fell in conceding reality to the many. Spinoza's substance was the all-embracing, all-comprehending reality, in which all single existences find their place[1], and may be conceived as grasped in connection with the whole by its necessity and rationality, while apart from this connection, considered as existing in themselves, they can only be the objects of erroneous, i. e. imperfect, incomplete perception.

Imagination is the greatest foe to true knowledge; for while we imagine single things, characterise them with words, and withdraw them by abstraction from their place in the great general order, we bestow the character of substance upon accidents, and sever and divide what in nature is undivided and connected. We can only attain to true knowledge by conceiving the universe as one, and considering it as existing, not in time but *sub specie æternitatis*.

Descartes' mistake was to bestow the character of self-subsistence upon the two predicates, thought and extension. This error revenged itself by making the union or interaction of the two substances permanently impossible and inexplicable. In fact the two predicates, extension and thought, are only two attributes of one and the same substance. The attributes are the eternal, immutable qualities of substance,

[1] This appears clearly from Eth. v. 24: 'Quo magis res singulares intelligimus, eo magis Deum intelligimus.'

which experience does not make known to us, but which themselves underlie all our experience[1]. Meditation upon these attributes leads to true, pure knowledge, which consists in this, that everything is brought into connection with the prime source of all existence, that is to say, with God, in whom all things live and move and have their being. Human thought approaches to perfection in proportion as it becomes a partaker in the divine, towards which its upward struggles are directed. All separate existences, mankind, individual men, are only modifications of the infinite substance, comparable to the curling waves, which form and vanish again upon the surface of the ocean. All separate existences, alike material or spiritual, are held together by the rigid iron bond of causality. It is only in the All that freedom and necessity are the same, for God creates and causes all things ex necessitate naturæ suæ, for he is infinite, untrammelled, and hence cannot be determined by anything else to act or work. Omnis determinatio est negatio.

The great problem of matter and mind is thus solved by Spinoza in the simplest, the most startlingly simple way, to which the saying *simplex sigillum veri* is surely applicable. As Goethe, Spinoza's greatest disciple, says, There is no mind without body, no body without mind. Both are one, they are a *Monon*, which our thought grasps by abstraction now on one side, now on the other, modo sub attributo extensionis,

[1] 'Nulla experientia id (quod ad essentiam pertinet) unquam nos edocere poterit. Nam experientia nullas rerum essentias docet, sed summum, quod efficere potest, est mentem nostram determinare, ut circa certas tantum essentias cogitet. Quare, cum existentia attributorum ab eorum essentia non differat, eam nulla experientia poterimus assequi.' Spinoza, Epistolæ, xxviii.

modo cogitationis; and then because they are denoted by different words, it is hastily assumed that different independent beings exist corresponding to their names. In reality instead of one matter and one mind, there is a single Something, which is both at once. Each taken in itself is imperfect: the two qualities are *distinguishable* but not *separable*.

A causal nexus must not however be assumed, connecting the two attributes. We should not ask if and how thought can act upon the body or the body on thought; in the world of extension everything is accomplished in accordance with stern, mechanical laws, while the mind proceeds only by the inward linking of ideas: only because the two worlds are one and the same, there is a mental change corresponding to every material one, and conversely. Hence the fundamental perversity of such questions as are propounded as the greatest problems in one-sided henistic systems, e. g. How can mind and consciousness originate out of bodily modifications? How can mind produce out of itself our ideas of bodies and the things themselves? In relation to man the essentials of the monistic view may be formulated as follows. Our body presents itself to us in twofold fashion; first as external, material, an object among objects, and then again as consciousness, feeling, will (all these expressions must be used together to characterise the nature of mind), or in a word as *internal*. It is only himself that man knows immediately in this twofold character: everything else in nature appears before him as external, as object. But he soon acquires, by intercourse with his kind, the observation of kindred lives, and finally, from irresistible rational grounds, the conviction that there is life in the whole of nature, that this inward property does not

belong to himself alone, but that, in greater or less degree, all other beings participate in the same. These degrees of consciousness constitute the degrees in the variety of things, and supply the standard of perfection clearly laid down in Spinoza's words: 'plus realitatis habere, i. e. plus agere, minus pati.' Schopenhauer himself was compelled to recognise the latter truth, although with him consciousness was only a subordinate variety of animal life, subject to the wholly unconscious Will. He says in the Parerga[1], 'Thus the degree of clearness in consciousness, or of reflection, may be regarded as degrees of *reality in existence*. But even in the human race itself these degrees of reflection or clear consciousness of personal or other existence are very numerous and gradually shaded. It must be admitted that some men have tenfold the intensity of being of others, *are* ten times as much... The majority of men only perceive things as they are in relation to the will of the moment, they do not reflect upon the sequence and coherence in their own existence, let alone that of existence in general; in a certain sense they exist without being aware of it. Hence the existence of the thoughtless proletaire or slave, who lives from day to day, approaches materially nearer to that of brutes, who are altogether restricted to the present, than our own does. Or we may compare it with the life of a cautious, intelligent merchant, who spends his time in speculation, in the careful execution of maturely considered plans, who founds a family, provides for his wife, children, and posterity, and moreover takes an active part in the affairs of the commonwealth. Obviously such a man possesses far more of conscious existence than the former, that is to say his existence

[1] Vol. ii. p. 630.

has a higher degree of reality. And if we turn now to the student who investigates, let us say, the history of the past, we find him possessing a consciousness of existence as a whole which extends beyond his own person and includes the course of the universe.' All this is implied in Spinoza's words: 'Quo unaquæque res plus perfectionis (*or* realitatis) habet, eo magis agit et minus patitur et contra quo magis agit, eo perfectior est.'

Everything seemed to show that the monistic theory of the universe, which first received its clear expression in the West at the hands of Spinoza (though in the East it had spread long before), would soon become generally prevalent, while dualism would be wrecked on the rock of its own inconsistency and irreconcilableness with science, and Henism, which in our day means practically materialism, would be condemned by its obvious incompleteness, and denial of the noblest and most essential qualities of humanity. The only difficulty still left for monism to surmount lies in the inveterate prejudice, which has grown in the course of ages into a second nature, according to which we distinguish between an animate and inanimate world, or even think of matter as something purely passive. We can only clearly and completely comprehend the nature of any being, by endeavouring to understand, not merely its outside, or the way in which it presents itself to our imagination as an object in space, but also its inner nature. But at this point we are met by the difficulty that the word *inner*, which is derived, like all our notions, from the external world, and only applied metaphorically to the mind, is usually misunderstood by those votaries of natural science whose only object of investigation is this phenomenal world, i.e. matter; for they imagine

themselves to penetrate by these processes into the very heart of organic things, and do not consider that all the while they are still only dealing with what is external. They must succeed first in the laborious endeavour to ascribe all that they know best and most directly in themselves—as consciousness, feeling, and will—to all other existing things, and only then will the veil begin to lift itself which conceals the great secret.

My task is here only to show the place occupied by Spinoza's doctrine in the course of the development of philosophical thought down to Kant's doctrine of knowledge, and to indicate, as before, what new truths were contributed and what progress made by his help, as well as what was one-sided and incomplete.

The gains were these:—

1. The establishing the idea of unity of substance, which put an end to the unnatural separation between thought and extension. It was now possible to conceive every sensible process as *at the same time* a material modification of the organs of sense and as a variety or mode of consciousness. This salutary combination, arising out of the former no less salutary distinction or differentiation, lends clearly a double aspect to every question, i.e. quatenus res consideratur sub attributo extensionis, or sub attributo cogitationis. It is only a development of Spinoza's thought that leads Tyndall to give the characteristic title to his valuable work, 'Heat *considered* as a *mode* of *motion*,' i.e. according to Spinoza, as a *modus extensionis*. Everybody always knew that heat was also a *modus cogitationis*, i.e. a sensation.

2. Besides this, the notion of substance, as the last residuum of the old ontology, tended to evaporate

into a single final unity, which strictly speaking amounted to nothing but *pure*, i. e. empty being, as to which men could know nothing whatever, except in so far as they themselves participate in that being. A complete change of front was thus effected. Hitherto the whole expenditure of strength had been directed to effecting conquests from the realm of one or other substance, but now it was both possible and necessary for the thoughtful intelligence to bring all its forces into the field against the idea of substance itself, and to show that this also was the creation of reason and must have its existence justified thereby. This, which was accomplished by Kant, is the turning-point in the history of philosophy: before him it was ontology, after him and through him it became dianoiology, or a theory of knowledge.

3. It was one of Spinoza's merits to have introduced the conception of an absolute and perfect knowledge, such as the reason always aspires after, in contradistinction to that which is limited, subject to the course of causation in space and time, and therefore conditioned by the boundaries of advancing knowledge. The only absolute knowledge is that which considers things in their eternal, infinite connection in God, i. e. sub specie æternitatis, and without the limitations of space and cause, and refers them all to the true final ground of all things, the *causa sui*[1]. Here are the true principles of all being and all knowledge; here the two flow into one. They are eternal truths, which not only explain and are

[1] '*Intellectus* res non tam sub duratione, quam sub quadam specie æternitatis percipit et numero infinito; vel potius ad res percipiendas nec ad numerum, nec ad durationem attendit; cum autem *res imaginatur* eas sub certo numero, determinata duratione et quantitate percipit.' De Intellectus Emendatione, sub fin.

presupposed by appearances and *modi*, but also lead us to necessary existence and reveal to us its true *essentia*. This true, perfect knowledge is opposed to the limited, which only conceives things in their component parts, as under the limitations of time, and space, and number. The latter occupies itself only with the *affectiones*, the *modi* of substance, not with its true *essentia*[1]. Spinoza overlooked at this point that, according to his own definition, man himself was only an ephemeral *modus* of the infinite substance, and that it was as impossible for a transitory intellect, hemmed in on every side by limitations, to conceive infinite substance sub specie æternitatis, as it would be to thrust out from some rapidly moving body a lever that was to uproot the fixed world from its seat. Still this contrast between true, absolute, and universal knowledge, and that which was limited by time, space, and causation, served to show the way to a clearer insight. It led to the salutary recognition of the limits of our reason, which forms the real task of metaphysics. Starting from this view, Kant was enabled to show that the first kind, absolute knowledge, is the unattainable ideal of human reason, which always strives after perfection; while the latter

[1] 'Seriem rerum singularium mutabilium impossibile foret humanæ imbecillitati assequi, cum propter earum omnem numerum superantem multitudinem, tum propter infinitas circumstantias in una et eadem re, quarum unaquæque potest esse causa ut res existat aut non existat. Quandoquidem earum existentia nullam habet connexionem cum earundem essentia sive (ut jam diximus) non est æterna veritas. . . . . Intima rerum essentia tantum est petenda a fixis atque æternis rebus et simul a legibus in iis rebus tanquam in suis veris codicibus inscriptis, secundum quas omnia singularia et fiunt et ordinantur; imo hæc mutabilia singularia adeo intime et essentialiter (ut ita dicam) ab iis fixis pendent, ut sine iis nec esse nec concipi possint.' De Intellectus Emendat.

kind represents its necessary process, its one final possession, the forms into which it must translate the whole phenomenal world.

4. In many passages, and especially in his *Tractatus de Intellectus Emendatione,* Spinoza displays a clear and penetrating insight into the true nature of knowledge and the path by which it must be reached, namely, a criticism of the intellectual faculties. He is clearly feeling for what Kant subsequently designated as the *a priori* element in human knowledge. 'In order to distinguish true and false ideas, we must,' he says, 'learn to understand the peculiarities of the intellect.' True thought is that which embraces objectively in itself the essence of a principle which needs no cause and can be known in and by itself. The *form* of true thought must hence be sought in itself, not in its relation to other forms; and it must not be derived from its own object, as if it were caused by that, but from the native force and nature of the intellect itself.' He gives as an instance an *idea vera,* the object of which depends upon our *vis cogitandi* and is not to be sought in *rerum natura,* and naturally selects a geometrical figure, the circle, for the purpose. He then adds: 'Unde sequitur simplices cogitationes non posse non veras esse, ut simplex semi-circuli, motus, quantitatis, etc., idea.' He speaks in the same way, at the beginning of the Tractatus, of the *vis nativa,* or native force of the intellect, which he explains as 'illud quod in nobis a causis externis non causatur;' and he characterises as an important task the attempt to enumerate all those ideas which are derived from the pure intellect and to separate them from the ideas of the imagination. At the same time he warns the student against drawing any con-

clusions from abstractions when he is dealing with actual things, and not to confound what belongs to the nature of the intellect with the real facts about particular things[1]. Finally, he insists, as upon the foundation of all true knowledge, on the need to seek first the cognitio intellectus ejusque proprietatum et virium; and at the same time he points out that in everything else truth is only reached by the help of correct definitions, tested and established by corresponding methods, while as to the intellect we are left without any further test or standard, so that the correct definition must be self-evident: 'quod vel definitio intellectus per se debet esse clara vel nihil intelligere possumus.' All these are so many finger-posts, pointing and preparing the way to a future examination of the pure intellect, or pure reason, its *vis nativa*, *proprietates*, and the like.

5. Lastly, it should be noticed that Spinoza, like all considerable thinkers, was well aware of the source of error lying in *words* and the self-deception of the human mind, which, as soon as it meets with a word, forthwith imagines that some equivalent thing or reality must exist to correspond with it. 'For as much as words are part of imagination, that is,

[1] In the Appendix to the Cartesii Principia Philos. more Geometrico Demonstrata (1663) Spinoza insists, almost in the very words of Kant, upon the difference between the entia rationis or *modi cogitandi* and real things: 'Ex omnibus supra dictis inter ens reale et entis rationis ideata nullam dari convenientiam apparet. Unde etiam facile videre est, quam sedulo sit cavendum in investigatione rerum, ne entia realia cum entibus rationis confundamus. Aliud enim est inquirere in *rerum naturam*, aliud in *modos* quibus res a nobis percipiuntur. Hæc vero si confundantur, neque modos percipiendi, neque naturam ipsam intelligere poterimus; imo vero, quod maximum est, in causa erit, quod in magnos errores incidemus, quod plerisque hucusque accidit.'

since we form many conceits, according as words are framed in the memory, at random, by reason of some bodily state; so it is not to be doubted that words like the imagination may be the cause of many errors unless we guard ourselves against them with much care. Add to this that they are constituted to suit the taste and capacity of the vulgar, so that they are only signs of things as they are in the imagination, not as they are in the intellect, which is evident from the fact that on all those things which exist only in the intellect and not in the imagination negative names, such as incorporeal, infinite, etc., are always imposed: and even many things which are truly affirmative men express negatively, such as uncreated, independent, infinite, immortal, etc., because the contraries of these are much more easily imagined; therefore these occurred first to the first men and usurped the place of positive names. We affirm and deny many things because the nature of words, rather than that of the things, admits of the affirmation and denial, and in ignorance of this we might easily take something false for the truth[1].'

The principal defect of Spinoza's system lies naturally in his idea of substance and the way in which it is educed; so that in the first preliminary conception existence is tacitly imputed to the subject, and then analytically deduced from it, like the conjuror's trick in which, to the astonishment of the public, an article is discovered where the performer has secretly had it placed beforehand. This leap from the mere idea, or what is thought, into the actual world is the most violent and break-neck *salto mortale* to be met with in any system of philosophy.

If Spinoza had remained faithful to his demand,

[1] De Intellectus Emendatione, xi. § 88.

conceived in the true Cartesian spirit, that enquiry should start with the nature and properties of the intellect, he could not have failed to discover, that just as time, space and number, by which all things are explained, are yet themselves only modi cogitandi [1], similarly the idea of cause or causality is an original, not to say the only original possession of our reason; and must therefore be first investigated, in all its varieties, ramifications and functions, before any direct application may be made of it to the world, or the degree of its certainty or reality. He ought therefore, before inferring a *first cause* of all beings, and thence deducing his ideas of substance or God, to have verified the idea of causation within the subject itself, and then only have proceeded to enquire whether and how far this idea justifies a transition to a world of thought and matter, manifesting itself in time and space. But he failed to enter on this verification, and the omission proved fatal at once to the first foundations of his system, and (at least in part) to its further development.

It has been noticed already how persistently Spinoza confounds and identifies *cause* with *reason* in the obvious intention of arguing from ideas to realities [2]. In this indeed he was only following in the wake of Descartes, with his ontological proof of the existence of God. But in Descartes there was still some approach to a rational sequence, and the idea of God appears as the *reason* of his existence. Spinoza, on the other hand, creates at once a *cause*, by describing God, or what comes to the same thing, substance, as *causa sui*, which is as great a con-

[1] Cogitata Metaphys. cap. i.

[2] Cf. Schopenhauer, Vierfache Wurzel des Satzes vom zureichenden Grunde, p. 13, and examples there collected.

tradiction or non-sense, as if it were said that someone was his own father.

I have already pointed out how Spinoza was dazzled by the methods of mathematics, or geometry, in which objects and definitions have their rise together, so that he began to dream of applying the same method with equal results to philosophical ideas. Hence his frequent comparison: as it follows from the nature of the triangle that the sum of its angles equals two right angles[1], so, with the same necessity, it follows from the idea of the deity both that it exists and that it contains and produces all things. This is clearly expressed in the Ethics (i. 16), 'Ex data cujuscunque *rei definitione* plures proprietates intellectus concludit, quæ ex eadem necessario sequuntur,' whereupon, ex necessitate divinæ naturæ, infinite attributes may be deduced. At the same time, the Deity is also the efficient cause of all things. That mathematical certainty is the norm of truth, that its decisions are eternal truths, equally valid in all times and places, that its laws supply the firmest foundation for all other knowledge, as in mathematics itself everything is deduced from a few postulates; axioms, and definitions,—all this contributed to make it Spinoza's ideal of true knowledge.

Spinoza's relationship to Descartes may also be characterised in this way. The latter took refuge in the transcendental idea of the Deity, to whom all things are possible, in order to prove the reality of the material world and the equivalence of the two substances. Spinoza took this equivalence seriously,

[1] 'Cum attendimus ad naturam trianguli, invenimus ejus tres angulos esse æquales duobus rectis; si talem habemus cognitionem Dei qualem habemus trianguli, tum omnis dubitatio tollitur.' De Intellectus Emendatione.

and wished to show how the possibility became actual. He *realised* the transcendental idea and made the Deity into an immanent cause, by identifying God and the world and combining extension and thought in the same substance. However much of truth there may have been in the fundamental thought, its execution was laboured and confused; all the more so because Spinoza, while postulating the idea of causation, everywhere assumed the existence of only one kind of causation, and endeavoured in consequence to represent thought as subject to the same kind of strict causal sequence as material changes, both being independent in themselves, and yet held together in necessary relationship. A thought can only be limited by a thought, a body by a body; each thought must be deduced from another thought, and so on to infinity, while a body can only be determined to rest or motion by another body.

Spinoza's attempt to make it clear to himself and others how these two attributes, extension and thought, in complete causal independence of each other, can yet be so joined together in the same being as to be regarded as qualities of it—this attempt must be held to have failed altogether; and again for the same reason; namely because it did not start from a thorough and exhaustive theory of knowledge, but only aimed at translating everything into 'reality.'

Attention should be paid more especially to the contradiction involved in assuming extension to be a quite special quality, altogether independent from thought, when in fact we can never know anything about this extension except what is contained in our thought concerning it, so that at last everything must be referred to that one quality. Spinoza

himself says[1], 'Sic etiam modus extensionis et idea illius modi una eademque est res,' which, as Schopenhauer well observes, can only mean that our idea of bodies and the bodies themselves are one and the same thing. And all the while no proof is given of the existence outside our thought of something real, answering to our idea, but distinct from it. 'We have thus,' Schopenhauer continues[2], 'a complete realism in Spinoza's doctrine, so far as the existence of things corresponds to the idea of them in our minds, for the two are one; and therefore we know things as they are in themselves. They are extended in themselves (extensa) just as they present themselves in our minds, when they become the objects of thought (cogitata). . . . Spinoza draws the line altogether on the ideal side, and stops short at the world as presented in thought; the latter, as characterised by its form, extension, he holds to be the real, which exists moreover independently of its presentation in thought. He is thus certainly justified in saying that what is extended and what is thought of, i.e. our idea of bodies and the bodies themselves, are one and the same. For things are only extended as they are thought and only thought of as extended; the world as idea and the world in space are una eademque res. We have no difficulty in conceding this. If extension were a quality of things in themselves, then our perception of it would be a knowledge of things in themselves; he assumes this, and herein consists his realism. But as he has not laid its foundations by showing how a world of space exists, corresponding to the independent world thought of as extended, the fundamental problem remains unsolved. . . . Spinoza's bias towards the ideal side

[1] Ethics, ii. Prop. 7, Schol.

[2] Parerga, i. pp. 10–13.

shows itself in his readiness to believe that reality was to be found in the extension pertaining thereto, and the consequent acceptance of the perceptible world as the only reality *outside* ourselves, and the knowing subject (cogitans), as the only reality within us. And in the same way, on the other hand, he reduces the only true reality, the will, into an ideal, by making it a mere *modus cogitandi*, and indeed identifying it with the judgment. (Eth. ii. Prop. 48, 49, "per *voluntatem* intelligo affirmandi et negandi facultatem;" and again, "concipiamus singularem aliquam *volitionem*, nempe modum cogitandi, quo mens affirmat, tres angulos trianguli æquales esse duobus rectis;" which is followed by the corollary, "Voluntas et intellectus unum et idem sunt").'

This severe criticism, which is just enough, so far as it refers to the object of knowledge, must be qualified by the consideration that Spinoza was the first to venture upon treating things, which presented themselves to our faculties of perception as altogether heterogenous, as qualities of one and the same being; and to say, this thinking subject is at the same time matter and mind, these two are therefore only properties, not independent things. All drawbacks notwithstanding, this was an important progress.

Great confusion and obscurity has been caused by the adoption among the successors of Descartes of the use of the term *cogitatio*, which, as has been shown, was used by himself to characterise all the modifications of consciousness, in the widest possible sense. The point becomes clearer exactly in proportion as we approach the question, What is thought, strictly speaking, and how is it distinguished from other forms of consciousness? a question first fully and lucidly dealt with by Locke.

Spinoza indeed contrasts reason and imagination, and says that the interchange of words and images with rational ideas is the cause of most errors, and accounts for this in the following words[1]: 'Verborum namque et imaginum essentia a solis motibus corporeis constituitur qui cogitationis conceptum minime involvunt:' but he makes no attempt to investigate the connection between the ideas of reason and the imagination and sensible perception, contenting himself with the most superficial explanations. The nature of ideas at least should have been clearly set forth, but on this point too he remains thoroughly obscure. Sometimes, as in the passage quoted above (p. 201), these ideas are identified with the simplest and most general conceptions, such as time, space, motion, mathematical figures, &c. Sometimes he tells us 'ideam quatenus est idea affirmationem aut negationem involvere[2],' which puts the idea on the same level as judgment. Then again he speaks of an idea 'rei singularis actu existentis[3].' Sometimes mind is the 'idea corporis[4];' sometimes 'mentis idea', and 'mens' are 'una eademque res[5];' sometimes the 'ideæ affectionum corporis' are what the mind perceives[6], and sometimes, in his own words, 'idea mentis (hoc est idea ideæ) nihil aliud est quam forma ideæ quatenus hæc absque relatione ad objectum consideratur; simulac quis aliquid scit eo ipse scit se scire et simul scit se scire quod scit, et sic in infinitum.' In short the word is used with the most fatal want of precision, and resembles anything rather than an *idea clara et distincta*.

The reason of all this confusion is that the boundary

[1] Eth. ii. Prop. 49, Schol.
[2] Loc. cit.
[3] Ib. Prop. 9.
[4] Ib. Prop. 12, 13.
[5] Ib. Prop. 21.
[6] Ib. Prop. 22, 23.

line is not sharply drawn between the Ideal, as the intelligent principle in the subject, and the Real, as the objective world, or matter of thought. Dominated by his leading idea, that the worlds of extension and thought are parts of the same substance, Spinoza insists upon this truth, repeating it sometimes of the thinking subject, sometimes of the matter of thought, i. e. the material world. The only result of which is increasing confusion as to the notion *idea*, which sometimes denotes, as in the Platonic theory, the intellectual plan in accordance with which the material form of things is realised, sometimes the representation which the intelligent subject has of this plan, and, finally, sometimes the inner spiritual side of the subject, i. e. consciousness and thought. If the mind is the *idea* of the human body, it makes a considerable difference whether I understand by this mind, the living active principle which finds its adequate expression in the body, or the thinking being itself, or, lastly, the consciousness that this mind has of itself and of the affections of the body. This continuous interchanging of objective and subjective constrained Spinoza to have recourse always to his God, as the sole possessor of adequate ideas of all things, whose ideas are completely realised in the material world, so that it is plainly in this connection that the proposition is laid down (Eth. 3. 7), 'Ordo et connexio idearum idem est ac ordo et connexio rerum.' Geometrical figures, i. e. those objects which come into existence by being thought, supply the illustrations here also. A really existing circle and the idea of this circle, which is in God, are one and the same. The circle, in so far as it is an extended thing, must be explained solely from the divine attribute of extension; the

idea of the circle, on the other hand, must be derived from the next idea, and this again from another idea, and so *ad infinitum*, but always from something contained within the intellectual nature of the Deity. Here we should be justified in asking Spinoza to explain how it comes to pass that two quite different causal series, the ordo et connexio idearum and the ordo totius naturæ per extensionis attributum, continue to subsist in complete parallelism, and why they can only be attributes of the same being. But we are told only, 'nec in præsentiarum hæc clarius possum explicare.' (Eth. ii. 7, Schol.)

This fundamental obscurity necessarily becomes increasingly obvious when human thought has to be explained. The true principle indeed is laid down (Eth. ii. 19) that the human mind is not conscious of its own body, and only knows it in so far as it is affected by other bodies. But instead of deducing thence the difference between thought or objective knowledge and mere dim consciousness or impulse, we are simply referred again to the Deity in whom, as an intellectual being, the true idea of our body and its modifications is to be found.

In general, notwithstanding Spinoza's zeal against the application of human ideas to the universe, notwithstanding his protestations that good and bad, perfect and imperfect, ideas of design and such like, are absolutely inapplicable to the world as such, notwithstanding his care to eliminate altogether the idea of personality from his God, there is still an undeniable touch of anthropomorphism in his representation of God as a *thinking* being, and the whole perceptible world as a manifestation of his nature or a realisation of his ideas. He has quite omitted to observe that human thought—the only

kind from which we can draw any inferences as to the nature of other thought—necessarily presupposes an individual being, and an external world contrasted therewith, by which it is affected and supplied with the material for its thought. In the One, which is at the same time the All, difference and consequently consciousness and thought necessarily disappear. Thought is not a fundamental property of the world; human thought and human reason have been produced as an accident of this world; our reason itself is finite, its duration exists in time, it had a beginning, and will not endure for ever; it would be presumptuous to ask what may come after it. But Spinoza attributes infinite thought to his God-World; his God is like an architect, whose living stones are individual beings, men included; each single being corresponds accordingly to an idea of the Deity, though but imperfectly informed itself as to its nearest relations, and only able to attain adequate ideas of things by thinking them in their relation to God. Confused and imperfect ideas only arise from our having a partial consciousness of consequences apart from their premisses [1].

Before closing this section it will be well to enumerate once more the points of most value to later generations of thinkers, which have been bequeathed to us by this seemingly obscure and perplexing doctrine. And of these, first, the conception of nature as something *living*. There is nowhere

[1] Eth. ii. 28, 29. Cf. De Intellectus Emendatione: 'Quod si de natura entis cogitantis sit, uti prima fronte videtur, cogitationes veras sive adæquatas formare, certum est, ideas inadæquatas eo tantum in nobis oriri, quod *pars sumus alicujus entis cogitantis*, cujus quædam cogitationes ex toto, quædam ex parte tantum nostram mentem constituunt.'

bare matter or passive machinery. All things, including apparently inanimate matter, have some inner quality. The degrees of consciousness may be thought of as infinitely various; there is no consciousness so faint but what it might become still fainter, no clear reflectiveness but what may aspire after still higher clearness. It is true Spinoza should have placed this doctrine, which seems so incompatible with our received notions, in the foreground, instead of only referring to it occasionally and as it were by the way: '*omnia*, quamvis diversis gradibus *animata*,' &c. (Eth. ii. 13.) The fundamental principle of Monism should be, the more exclusion or isolation, the less consciousness. This idea was indeed first made possible by Leibniz, who made due allowance for what is individual, and made that his starting-point, while Spinoza's 'thinking substance,' in spite of his efforts to the contrary, by its assimilation to the thinking man, necessarily tended to personify and individualise the All.

2. The Monistic idea casts an especially clear ray of light upon the great mystery of human thought. While antiquity failed to recognise any distinction between words and ideas or thought and speech, the epoch-making generalisation of Descartes has enabled us to distinguish between a word, the utterance of which is only a bodily change or motion, and its spiritual content, the idea. Both Descartes and Spinoza showed the general and not yet extinct belief that thought is antecedent to speech, and that the soul is thus first in possession of ideas which it subsequently denotes or expresses in words. Down to the second half of the present century we meet with no trace of a perception of the dependence of thought on language, which must be called not only

the fulcrum and adminiculum, but the very *body* of thought. And yet it is a thought quite in harmony with the spirit of Spinozism, that language and thought are one and the same thing, only viewed from different sides, i. e. once quatenus res est extensa, and once quatenus res est cogitans, or as external and internal; that the two are distinguishable, but not separable; that it is just as impossible to have thought without language, as language without thought.

Not less certain is it that the *object* of speech and thought, i. e. that which we are in the habit of characterising as the matter, or content of thought, could have no existence without this two-sidedness of the material and the mental elements. For there is no external world capable of being grasped at once by our thought, without a preliminary idealising transformation, so that all external existence must undergo a kind of transsubstantiation; just as everything internal or spiritual, before it can be spoken or thought, must be converted into something material or sensibly perceptible. This proceeding of language, which is known as the metaphorical or tropical, used to be generally regarded as a mere rhetorical ornament, although a glance at any dictionary would have sufficed to prove that it constitutes the real essence of language. The idea of *matter* has as much of an ideal character as the idea of spirit has of a material and sensible origin (spiritus, anima, ruach). Neither are things in themselves, but both objects of thought; and in this the philosophy of language agrees entirely with the Transcendental philosophy.

3. Objects, says Spinoza (Eth. ii. 5), are not the cause of ideas; the enchainment of ideas depends wholly and solely upon the intellectual nature of the

Deity, so that one idea follows and springs from a preceding idea, and so on in infinite succession. An element of profound truth must be recognised here, however strange and repugnant it may seem to us to assume strict causation between ideas, without any reference to their objects. I will not insist here upon its transcendental result, that thought must necessarily contain within itself the principles of truth, since it cannot possibly receive them from external objects, which virtually establishes the independence of the intellectual principle from the external material world. Neither will I point out here that the whole development of the universe, in which one form always proceeds from a kindred form, can never be made intelligible by means of mechanical causes pertaining to the world of extension; but must be regulated by the intelligent principle, though indeed neither the Platonic, nor the immanent ideas of Spinoza adequately elucidate the problem. It will be enough to show the validity of this proposition of Spinoza's in regard to the creative energy of the human mind, and especially the development of language and concepts. For the activity of mankind, the revolutions effected by men on the world's surface, are not caused by external objects, but wholly and solely by the inner, active intellectual nature of mankind; their origin is traceable through an immeasurable chain of past races, during whose transitory existence in like manner thought has proceeded from thought and creation from creation in a spiritual sequence of the same continuous causal character as the illimitable generations of animal species. It is also one of the most certain discoveries of the science of language that never, in the whole course of linguistic development, has a word or notion been educed from an

external object, but always uninterruptedly an idea from an idea, as in the outward activity of men creation follows creation,—a literal confirmation of Spinoza's proposition, 'Rerum singularium ideæ non ipsa ideata, sive res perceptas pro causa efficiente agnoscunt, sed ipsum Deum, quatenus est res cogitans,' in which we have only to read the intellectual principle, or human reason, instead of Deus. Geiger observes, in agreement with Spinoza, 'Language and thought are only made intelligible to us when we discern that our will is not a contemporary offspring of a given stimulus, nor our belief of an intuition, our conception of a phenomenon, or our thought of an object; but that it is the past,—from the beginning when the All emerged from primæval nothingness, down to the present moment, when an atom of the eternal world-force has constituted this ego of ours, —which lives, believes, thinks and feels in us; and that therefore it is behind, not around us, that we must look for the key to the riddle within and without and the source and origin of all true being.... The forms of thought do not proceed either from us or from things—from field and wood, as the poet has it; but each one of them had its rise and origin from a preceding form, as one animal generation gives birth to another[1].' Thus the nature of thought consists not in perceptions of objects, but in conceptions, receding in unbroken filiation through an immeasurable past, in an order which science must trace back to the hoar antiquity in which thought and language had their beginning. This holds good not only of all thought, but of the perceptive faculties as well, which have become so highly developed in mankind

[1] L. Geiger, Ursprung und Entwickelung der menschlichen Sprache und Vernunft, i. p. 108.

as a consequence of this mental activity. The same truth must even be applied to the sensible perceptions of the lower animals, which are also impossible without some germs of thought. We and they perceive things as we do, because of the immeasurable succession of intuitions and perceptions which has gone before us in the past, and which is being continued, through the present generation to future ages and races. Mind begets mind, consciousness consciousness, perceptio ex perceptione, conceptus ex conceptu, idea ex idea. Isolated mechanical existences afford us no explanation; we can only admit that such and such mental phenomena would be impossible without such and such material ones. And it is easy to see what tragical results must follow, from the confusion and interchange of the two elements, if we glance at the numerous and ill-fated theories of the origin of language, which have attempted to establish a causal connection between the mental content of ideas and the audible sounds of words.

4. It appears from many passages, both in the Ethics and in his letters, that Spinoza was fairly on the way towards Transcendental Idealism, and therefore to the Kantian doctrine, according to which phenomena must be distinguished from things in themselves. In the interests of clearness he should at this point have freed himself from the Cartesian ideas of substance, cause, &c., or rather have subjected them to careful investigation. He says (Eth. ii. 16) that the way in which we are affected by external things depends much more upon the constitution of our body than on the nature of the external things. In the Scholium to the seventeenth Proposition he adds: 'Corporis humani affectiones quarum ideæ corpora externa velut nobis præsentia repræsentant, rerum imagines

vocabimus, tametsi rerum figuras non referunt;' and continues that the mind does not err so long as it stops short at imagination; error only begins when these things are assumed to exist objectively. He even admits that the self-knowledge of the mind cannot proceed further than a conception of the affections of the body (prop. 23). Similarly he observes (prop. 25) that an adequate knowledge of the foreign bodies acting on our own cannot be derived from the affections of the latter, which is an admission that a true knowledge of things in themselves is impossible, for (prop. 26) 'mens humana nullum corpus externum, ut actu existens percipit, nisi per ideas affectionum sui corporis.' And in the corollary to prop. 29, the conclusion of the whole matter is summed up, that the human soul, in so far as it contemplates things according to the common order of nature, cannot attain to adequate but only to confused and partial knowledge either of itself, its own body, or external things.

In reference to Space and Time, Spinoza also gives expression to views which seem like a faint foreshadowing of the Kantian doctrine. Even in the Cogitata Metaphysica he says (cap. 4) that the duration of a thing is *non nisi ratione* distinguishable from its existence, and that this accordingly is a token of its *existence*, but by no means of its *essence*. In like manner he observes in the passage above quoted (p. 202, note) that there can be no real agreement between actual things and the modi imaginandi; and he includes among these entia rationis, 'tempus, numerus, mensura et si quæ alia sunt.'

He expresses himself most clearly in the 29th Letter[1], where he distinguishes the knowledge which is limited by space and time from the true knowledge

[1] Opera, ed. princ. p. 467.

which deals with the eternal, infinite, and indivisible substance[1]: 'Moreover since we can determine duration and quantity at will, conceiving the latter apart from substance, and the former apart from its relation to things eternal, *time* and *measure* (space) come into being; time to determine duration, and measure to determine quantity, in order that we may imagine them as easily as possible. Then because we separate the affections of substance from the substance itself, and classify them, in order that we may imagine them the more easily, *number* originates, whereby we determine the same. From which is clearly to be seen that measure, time, and number are nothing but modes of thought, or rather of imagination (i. e. according to Kant, forms of sensibility). Wherefore it is not strange that all who, by the help of similar notions, and these moreover badly understood, have attempted to interpret the course of nature, entangled themselves marvellously in such wise as to be unable to extricate themselves without violence and the admission of absurdities, yea of the very utmost absurdity. For there are many things which are not accessible to the imagination, but to the intellect alone, such as substance, eternity, and others. And if any one endeavours to explain such things by means of notions which are only auxiliaries of the imagination, he is only as it were labouring to make his imagination run mad. For even these

[1] 'Quantitas duobus modis a nobis concipitur: abstracte scilicet, sive superficialiter, prout ope sensuum eam in imaginatione habemus, vel ut substantia, quod non nisi a solo intellectu fit. Itaque si ad quantitatem prout est in imaginatione attendimus, quod sæpissime et facilius fit, ea divisibilis, finita, ex partibus composita et multiplex reperitur. Sin ad eandem, prout est in intellectu, attendamus, et res ut in se est, percipiatur, *quod difficillime fit*, tum ut satis demonstravi, infinita, indivisibilis et unica reperietur.'

modes of substance can never be rightly understood, if they are confounded with these entia rationis or auxiliaries of the imagination. For when we do this we separate them from substance and the mode in which they have proceeded from eternity, without which they cannot be rightly understood.

'For the clearer apprehension of which, take this example:—If any one were conceiving duration in the abstract[1], and then, confounding it with time, proceeded to divide it into parts, he would never understand how e. g. an hour could pass away. For in order that an hour should pass away, first the half must pass and then the half of the remainder, and then the half of that remainder, and if one continues thus dividing to infinity one will never come to the end of the hour. Therefore many who are not accustomed to distinguish the things of the mind from realities maintain duration to be composed of moments, and so fall into Scylla in their desire of avoiding Charybdis. For to make duration consist of moments is the same as to make number consist of the addition of noughts.

'But from what has been said it appears sufficiently that neither number, nor measure, nor time, since they are but aids to the imagination, can be infinite (for otherwise number would not be number, nor measure measure, nor time time); hence too is clearly to be seen why many who confound these three with actual things, because they are ignorant of the true nature of things, actually deny the existence of the Infinite.'

It only remains now to indicate summarily the great stride in the progress of philosophical thought marked by Spinoza's doctrine. It is true that his

[1] i. e. in itself, apart from its relation to eternity.

conception of substance seems on the one hand to make all knowledge impossible, and on the other to make all experience superfluous; for if our apprehension of things in time and space is only an illusion of the senses, if all determination is negation, by what ladder can the human mind, which has no resource but in these forms, scale the height from which it is to view the universe sub specie æternitatis? But all this notwithstanding, it should be remembered that Spinoza was the first to realise that ideal of Reason towards the unity and completeness of which others had aspired in vain, and that thus through him scientific *knowledge*, in the special sense of the word, first became possible.

It is certain that all pluralism is a shock to reason, and that a multiplicity of fundamental principles represents only so many unsolved and incomprehensible riddles. As in religion primitive polytheism naturally passes into monotheism, so philosophical speculation, after having tentatively brought together the most various principles as constituting the nature of things, must end by attaining to a unity in which all these principles meet and harmonise. This is the way in which human reason is compelled by its nature to proceed. Its endeavours can only be arrested if it pauses on its course to consider and examine its own nature, and so makes the discovery that this unity really lies only in itself[1], and that the

[1] 'The order and regularity in phenomena, which we call nature, is supplied by ourselves, and we should not find them there unless we had first imported them.... Extravagant and absurd as it may seem to say that the understanding is the source of the laws of nature, and therewith of the formal unity of nature, such an assertion is as correct as it is conformable to its object, namely experience.' Kant, Critik der reinen Vernunft, pp. 112, 114.

world can never offer it what it seeks; in other words, if it discovers that the work of philosophy consists in tracing out the limits of human knowledge and in teaching

'Quid valeant humeri, quid ferre recusent.'

Spinoza represents the culminating point in this endeavour to find unity in the world of reality. It is undeniable that ancient philosophy ended in pluralism. The Platonic ideas stand in no such relation to each other as that one generates or conditions another in any way that would enable them to be combined in a regular system, explanatory of the actual order of the world. In like manner the Aristotelian Forms, or Entelechies, have an unavowed multiplicity, which cannot receive the slightest elucidation from the conception of matter, from which they were all formed. These ideas only cease to be unintelligible, as the human mind comes to be recognised as the native soil whence they naturally originate, growing up in constant causal coherence. The memorable turning-point after which this knowledge became possible was reached on the day when Descartes consigned to philosophy, as a secure and inalienable possession, the one word Cogito. I say it became possible, for everything else had still to be accomplished by the philosophy of the future. The other principle introduced by Descartes is far more perfect, indeed almost entirely complete—the one namely by which he swept away the Aristotelian formæ substantiales, the occult qualities, quintessences, &c., and established once for all a solid base for science—the principle of mechanical causality.

Something however of the unsatisfactory incompleteness belonging to pluralism still adhered to the surviving unqualified dualism. The labours of the

mind were lessened, but not wholly relieved. The mathematical method had introduced the strict rule of law in the external world, but where were the laws of the immaterial substance to be found? The mind was supposed to be in possession of certain eternal truths, and it was maintained that whatever was *clare et distincte* discerned by the mind had a claim to certainty; but where was the criterion of certainty, where the system which is to deduce everything here from the uniform nature of thought and consciousness, as elsewhere from the single principle of extension and motion? It cannot be denied that the æternæ veritates, the universals, were an unfounded *a priori*, i.e. a concealed pluralism. Geulinx alone, by attending to the form of *judgments*, endeavoured for the first time to trace the operations of the mind, i.e. the nature of thought, and, as we have seen, disclosed the real lurking-place of the notion of substance.

Another weakness on the same side of the Cartesian dualism must also be noted. The only thing which is really *us*, which is in our own power, is our thought, by which Descartes understands all forms of consciousness, knowledge, will, imagination, sensible perception, &c. This is, from one point of view, the great truth of idealism, that the source of all direct knowledge is to be found in consciousness; but from another —latet anguis in herba. Are our thoughts really so much in our own power? Or are we not rather, in relation to them, conditioned and overruled by countless influences which have *their* source in the thought of our contemporaries and, still more, in that of antiquity? And even if thought were really thus independent, if furthermore the will were subject to its dominion, what does that prove concerning this

spiritual substance? Does it not tend to become a mythological entity, which so far from being and working in subjection to universal laws, would just think and act because it chooses? In other words, in spite of the apparent simplicity of the two principles, is not the purely individual element introduced here, on one side, which is quite as incapable of becoming the object of knowledge as isolated sense-impressions?

Thus the Cartesian dualism is not only divided against itself; even on the one—the intellectual—side there are numerous gaps and inconsistencies. This is especially obvious in the traces of its effects upon contemporary thought. The two substances, which have nothing in common with each other and therefore cannot act on each other, are mutually indifferent and may subsist tranquilly side by side, so long as neither takes any notice of the other. But as this is not easily carried out, each time that they approach, great confusion and excitement is produced. The born man of science, a mathematician and mechanician, is distracted when reminded that there is such a thing as immaterial causation, and cries out, 'Noli turbare circulos meos! There is but one causal chain—the mechanical. There is no exception to the law of the conservation of force.' The genuine philosopher, on the other hand, to whose share the higher problems of the mind have fallen (not an apprentice escaped from the surgery or the chemist's laboratory), vexes his soul continuously over this stupid, lumpish matter, which notwithstanding its phantasmal nothingness persists in thrusting itself staggeringly upon him at every turn.

Spinoza delivered the human mind once and for ever from these perplexing torments, and any mortal,

who suffers from them still, may turn confidently to his writings as a healing *fontaine de jouvence*. The universe has no outlaws; strict causality rules everywhere; as much in the world of mind and thought and conscience as in the material world where its presence is already generally assumed. Why should this seem an unwelcome infringement of the freedom of the will? Does not all rational and moral conduct obey an internal compulsion ex necessitate naturæ suæ, while fools and wild beasts own no such law and therefore seem in one sense more free? Science only becomes possible by this means, since the succession of things and events can only be explained if they are referred to the causal bond.

Only between thought or consciousness and the attribute of extension in the material world no causal connection is conceivable; they are two quite different properties, and there is no reducing them to an equation, so as to allow of reciprocal causation. All serious thinkers, such as Descartes, Geulinx, Malebranche, and soon afterwards Leibniz, saw this plainly, and sought for a third and higher cause which might be the common condition of the unquestionable parallelism between the two worlds. They all agreed in having recourse to the Deity as this third cause, while they overlooked or disregarded the simplest solution of the problem, namely, that the differing elements were one and the same. Why should they not be so? Are not we ourselves walking instances of a similar possibility? Have we not all an inward and an outward property—the former will and consciousness, the latter motion?

Daylight dawns upon the widening prospect; the sunrise crimsons the far horizon; the old error has been explained away, and the forms of thought

suggested by false views of causal connection[1] are discarded. How can an idea be the cause of a material creation? Because the Being that thinks is also at the same time an extended or material one, able to act upon the outer world in accordance with mechanical laws. How can the mind be reflected in strange material elements? Because the sensitive being is at the same time provided with bodily organs, which are moved by strange bodies, and by their own sensitiveness act as intermediaries of perception. Thus there are creative ideas answering to *natura naturans*, and ideas which reproduce and reflect creation, *natura naturata*. There is no strange ghostly guest lodging in the world; everything partakes rather of its own nature, is flesh of its flesh and soul of its soul. Hence sensible perceptions have their place in the material world, and motion its significance for the world of spirits.

The points where Spinoza's doctrine needed to be continued, developed, and corrected by his immediate successors may be enumerated as follows:—

1. In the first place, Spinoza's substance, or God-world, had swallowed up all difference and multiplicity in its own unity; it was therefore necessary to re-extract the really existing manifoldness and allot its proper place in the general order to each separate and special existence. This is done by the

[1] E.g. I move my arm *because* I will. *Because* we think, we speak—clothe our thoughts in words. We first perceive an object and then project it externally. The mind is the cause of the development of the world, the world is the cause of the development of the mind, and so on. In all these examples, the application of the causal idea is erroneous, for in each case there is not causation but identity.

recognition of *Individualism*, which constitutes the true essence of all separate existence. The proposition that all determination is negation is thus only partially true. (Leibniz.)

2. Spinoza's uniform application of the notion of cause to the world of thought and matter alike without distinction, must be set aside; object and subject melt into one with him, and hence arises the frequent interchange of *causa* and *ratio*, the material cause and the mental reason. This essential distinction must be restored and clearly defined. (Leibniz.)

3. The beginning made by Spinoza, in recognising the causal dependence of spiritual phenomena, cleared the way for an attempt to examine more closely into the nature of human knowledge and its connection with sensible perception, an attempt which will throw light upon the importance and necessity of *Empiricism*. (Locke.)

4. Upon this the necessary distinction between subject and object becomes self-evident, and a criticism of sensible perceptions becomes possible in its turn, as we ask, what, in the last resort, is purely subjective, and what qualities belong to the object as such. The distinction between qualitates primariæ and secundariæ is contributed by Locke.

5. The superiority of human knowledge is due to its possession of a special class of objects which we call ideas or conceptions. By and with their help all human thought is accomplished. In order therefore to decide upon their substance and reliability, the origin of ideas must necessarily be investigated, since they have neither existed from eternity nor been implanted by a miracle in man. (Locke.)

6. Spinoza's idea that the existence of individuals

was but partial and apparent needs to be further carried out. His recognition of the greater and less degree of reality possessed by these beings must be joined on to the perception, in all things, of gradual development and transition, by which the infinite variety and lavishness of natural forms is to be accounted for and explained. This principle of the continuity of forms must be applied also to the causal sequence and will serve to verify its pretensions. In this way the origin of man, his higher liberty and intellectual superiority, becomes for the first time the object of investigation and a not insoluble problem. (Leibniz.)

7. The definition of material substance, as laid down by Descartes, suffers from one grave imperfection. According to Spinoza the universe is life and activity; *plus agere, minus pati* is his measure of perfection, and thus he nowhere gives us anything really passive; the true essence of things consists rather in their effective activity. Hence the mere empty idea of extension is insufficient—some other must be put in its place; and for material substances the only other possible is the idea of *Force*. (Leibniz.)

THE EMPIRICAL TENDENCY.

LOCKE (1632—1704).

'The proper study of mankind is man.'

We have seen that Geulinx was the first to formulate the demand which it is the great merit of the Kantian Criticism to have satisfied; and this demand, that philosophy should ascertain and trace the limits of human knowledge and understanding, was now clearly and expressly repeated by Locke.

He says in the Introduction to his Essay concerning human understanding: 'I thought the first step towards satisfying several enquiries, the mind of man was very apt to run into, was to take a survey of our own understandings, examine our own powers, and see to what things they were adapted. Till that was done, I suspected we began at the wrong end, and in vain sought for satisfaction. . . . Thus men, extending their enquiries beyond their capacities, and letting their thoughts wander into those depths where they can find no sure footing; 'tis no wonder that they raise questions and multiply disputes, which never coming to any clear resolution are proper only to continue and increase their doubts, and to confirm them at last in perfect scepticism. Whereas, *were the capacities of our understandings well considered*, the extent of our knowledge once discovered, and the horizon found, which set the bounds between the

enlightened and dark parts of things, *between what is and what is not comprehensible by us;* men would perhaps with less scruple acquiesce in the avowed ignorance of the one, and employ their thoughts and discourse with more advantage and satisfaction in the other.'

Although it was plain that the Cartesian starting-point, the *Cogito*, must lead ultimately to this view, we must grant to Locke the same kind of praise as that accorded by Aristotle to Anaxagoras for having first recognised intelligence (νοῦς) in the world, since he first distinguished reason, as a special faculty in the mind, and thought proper, from the other so-called *modi cogitandi*, will, feeling, imagination, etc. He saw plainly that the essence of human superiority lay in this point, and that on it must rest the lever by which all the rest was to be upheaved.

'Since it is the understanding that sets man above the rest of sensible beings, and gives him all the advantage and dominion which he has over them, it is certainly a subject, even for its nobleness, worth our labour to enquire into.'

A certain degree of mysticism or illuminism always lurked among the opinions of Descartes and his successors, since the æternæ veritates, and the 'clear and distinct' understanding, which are assumed without foundation, can only be finally explained by a participation in the divine reason.

Reason as a natural gift, operating by natural means, and explicable by natural processes—this conception constitutes an undying title of honour for Locke, even when due weight is given to his obligations to Descartes, whose conception of the unity of all consciousness under the general idea 'Cogito' had paved the way for a juxtaposition of sense and

reason, in which the latter could appear as lineally descended from the former.

Now at last Empiricism had found the true course. The material world is no longer the only object of observation and intelligent examination: the connection between it and immaterial nature, the increasing volume of the latter as it is fed by all the streams of sensibility, in a word the growth and development of the mind itself, has become an open secret, of which any who will may henceforward master the key.

Descartes had chased the meagre ghosts of scholasticism out of the field, and had rebuked the presumptuous claims of the reason to contain within itself a treasure of facts and conclusions fit to solve all problems presented from without. Locke rendered the same service to the inner world.

'No Innate Ideas' was the device under which he fought, repelling numerous and vigorous assaults. As, before Descartes, all matter was occupied by spirits, qualitates occultæ and formæ substantiales, scaring from their entrenchments all reasonable explanations, so, before Locke, innate ideas held undisputed sway over the minds of men. The attack had to be directed against these, and only a life and death struggle could decide whether rational explanation or mysticism was to have the right of explaining the nature of reason itself. Compromise was impossible, and, as we know, Locke emerged victorious from the affray.

If ideas are innate they are a mystery, not to be investigated or explained. Throughout the controversy Locke follows the same route as nature, and begins by appealing to what is known of children. God, Liberty, Immortality—are these ideas innate,

already existing in the infant that can do nothing but scream when it is uncomfortable? If however it is said that these ideas and truths are outlined already in the soul and pass into consciousness as the reason ripens, this is virtually saying that reason makes men know what they knew already.

And then, where is the limit to be drawn? If mathematical truths are innate, all relations of space and number must be so equally; if all self-evident propositions are innate, such truths as that sweet is not bitter, black is not white, &c., must be innate also.

It did not occur to Locke to deny that much in the child was really innate, but everything upon which past philosophy had laid most stress, ideas, eternal truths of the understanding, as well as religion and morality, in a word, rational thought and the highest peculiar faculties of humanity, are not innate, but, on the contrary, the product of development and individual acquisition, subject of course to the influence of education, without which indeed man can scarcely grow up human.

If however the human child does not come into the world with an inborn treasure of certainties, truths, and conceptions, where then is the true origin, the sole prime source of all our ideas and knowledge, to be sought? In experience alone, which we receive by the gates of the senses: 'nihil est in intellectu quod non prius fuerit in sensu.' The soul is originally a tabula rasa, a blank sheet upon which experience and sensation write at will.

On account of this empirical bent, Locke has been treated as a mere disciple of Bacon, while the views of the French materialistic school, and more particularly of Condillac, have been represented as the

logical outcome of his doctrine. In both these cases injustice is done to the philosopher. The external connection indeed cannot be denied, but by the philosophical substance of his doctrine, Locke belongs to the group of leading thinkers who approached seriously the greatest problems of nature and mind. The method of observation and experiment advocated by Bacon dealt only with nature, Locke's doctrine endeavours by the same method to solve the mystery of the Cogito. He is thus a worthy successor of Descartes, from whom he had learnt much. As to the French materialists, our estimate of their insignificance is shown sufficiently by the fact that it seems unnecessary to give them any place at all in this historical sketch, since their work consisted simply of wire-drawn reproductions of a few scraps and fragments of Lockian doctrine. Condillac's explanation of thought as *une sensation transformée* and the ingenious allegory of the animated statue have no claim to originality. French materialism was simply a logical development of *one* side of Cartesian thought, combined with Epicurean sensualism and Lockian empiricism. All hinges on the two ideas of *l'homme machine* and *penser c'est sentir*[1]. Cabanis (1757–1808), Destutt de Tracy (1754–1836), and Maine de Biran (1766–1824) were the first of the

[1] Diderot and Voltaire are exceptions; the first too profound, the latter too clear-headed to rest satisfied with the empty hollowness of materialism. The former was by conviction a *monist*, the latter inclined to the same view, although it was not his nature to lose himself in philosophical depths. '*Je suis corps et je pense*: voilà tout ce que je sais,' Voltaire writes in his Letters from England, and he expressly declares that 'any one who maintains mere material movements to be sufficient to produce feeling and thinking beings, must have lost all traces of sound human understanding.' Rousseau stands apart in his century.

French school whose efforts call for recognition. As a whole the school remained unfruitful, stopping short of the all-important truth, the connection between thought and language.

The greatness of Locke is shown by his recognising this truth so much in advance of his age, even though the true source of the dependence, the identity of thought and speech, had not yet dawned on him. But his eagerness to probe the nature of human reason to the bottom, and the analytical skill needed to found this chief human gift upon a scientific basis, led him naturally into investigations of the nature of language, and these sections of his famous work are full of new and luminous points of view which contain some truth already, and the promise of more. Locke states it as his purpose 'to enquire into the original certainty and extent of human knowledge, together with the grounds and degrees of belief, opinion and assent, . . . and to consider the discerning faculties of a man, as they are employed about the objects (i. e. ideas) which they have to do with. . . . And I shall imagine, I have not wholly misemployed myself in the thoughts I shall have on this occasion, if in this historical, plain method, I can give any account of the ways, whereby our understandings come to attain those notions of things we have, and can set down any measures of the certainty of our knowledge on the grounds of those persuasions which are to be found amongst men, so various, different and wholly contradictory.'

Locke reckons sensible perceptions among simple ideas. The organs are the channels leading them to the mind. The soul is as little able to create ideas out of nothing or to destroy those which have been framed as a man is to create or to destroy the

smallest mote in the sunbeam. No idea of colour can be given to the blind, nor of sound to the deaf.

Reflection is opposed to sensation. The latter is experience of the external world, the former of the inner one, i. e. the states of the soul. The mind in this is sometimes active, sometimes passive. *Perception* is the representation of things external given by sensible impressions. The mind in this is purely passive, it is as powerless to escape or alter these impressions as a mirror to change the objects reflected in it. *Retention* is the revival of former representations, the important power of memory and recollection, and the mind in this is not wholly passive. There is a natural defect of the human mind, associated with the faculty of recollection, namely, that the latter only recalls its objects in succession: 'Whereas we can conceive some superior, created, intellectual beings which in this faculty may so far excel man that they may have constantly in view the whole scene of all their former actions, wherein no one of the thoughts they have ever had may slip out of their sight.' All these functions belong also to the lower animals. The highest property of the reason is the power to compare, distinguish, unite, and separate; and in this the human mind far surpasses that of brutes, in virtue of the gift of abstraction, or universal notions, which he alone possesses, and of which anon.

In all this we see a general outline of the analysis of mental operations, and their dependence on the world of sense, subsequently carried out with so much clearness and precision by Kant. Kant will modify and correct; he will show that even in mere perception or representation some active co-operation of the mind is necessary, such as is still more apparent in reproduction or recollection; but the main outline was

drawn by Locke. The opposition insisted on by Kant between mere receptivity, or passivity of sensibility, and the activity of thought, is hinted at in Locke, though the real weakness and one-sidedness of his doctrine has its origin in his neglect of this distinction.

Another important distinction, that is drawn by Locke, is that between sensations and the real, essential qualities of bodies, or the distinction between qualitates primariæ and secundariæ. If we can only learn by experience of the external world as much as affections of our senses tell us, it becomes a question how much of the data of experience is due to this subjective element, and must be allowed for accordingly, if we wish to attain to knowledge of the thing as it is in itself. It is obvious, for instance, that the sweetness of honey exists in our palate, not in the honey itself; heat, light, colour, sound are only feelings in me, not qualities in things, and can only be regarded as the effects produced by them on my organs of sense. What then are the qualities pertaining to things in themselves, which constitute their nature and being? Obviously those primary and original qualities which are inseparable from the idea of matter, which are the same under all circumstances and present in the smallest atoms, that is to say, solidity, extension, figure, position and number of parts, motion, &c.[1] 'The ideas of primary qualities of bodies are resemblances of them, and their patterns directly exist in the bodies themselves; but the ideas, produced in us by these secondary qualities, have no resemblance of them at all. There is nothing like our ideas existing in the bodies themselves. They are in the bodies, we denominate from them, only a power to produce those sensations in us, and what

[1] Essay i. cap. 8. §§ 11–15.

is sweet, blue or warm in idea, is but the certain bulk, figure and motions of the insensible parts in the bodies themselves which we call so.' We see here how Locke bridged the passage from the subjective or represented to the real world[1]. And this separation also was a prelude to the great leading idea of the Kantian Criticism.

The ideas of *space* and *time* are carefully weighed by Locke, and the fundamentally erroneous identification of matter with space extension, introduced by Descartes, is set aside. Locke substitutes for it the idea of *solidity*[2], which 'we receive by our touch, and which arises from the resistance which we find in body, to the entrance of any other body into the place it possesses, till it has left it. There is no idea, which we receive more constantly from sensation, than solidity... This, of all other, seems the idea most intimately connected with and essential to body.' But space and solidity are distinct ideas, as are body and extension. Space therefore may be imagined 'either as filled with solid parts, so that another body cannot come there, without displacing and thrusting out the body that was there before, or else as void of solidity, so that a body of equal dimensions to that empty or pure space may be placed in it, without the removal or expulsion of anything that was there.'

Space, time, and number are three simple stock ideas, capable of endless modifications, from which accordingly innumerable modal ideas can be derived. We obtain the idea of space by means of sight and touch; every measure within it may be conceivably

[1] 'Solidity, extension, figure, motion, and rest would be really in the world, as they are, whether there were any sensible being to perceive them or not.' Essay ii. cap. 21. § 2.

[2] Ib. cap. 4. § 1; cap. 13. § 11.

increased, and it leads thus to the idea of infinity. The position of an object can only be determined in relation to something else; the place of the universe cannot be determined, it is identical with formless, immeasurable space. Without space naturally neither solidity nor motion are possible, but the latter, the true qualities of matter, differ *toto cælo* from space. Material atoms may be divided and moved in various ways: it is as impossible to divide space in reality as in imagination; to consider portions of it apart is not separation. The parts of space are likewise immoveable. But to the question, whether space then is substance or accident, there is no shame in replying, *We do not know.* Only let all beware of the misleading sophistries in which one is entangled if one begins to take words for things.

It is equally hard to say what *time* is. St. Augustine's answer to the question is clever: 'Si rogas quid sit tempus, nescio, si non rogas, intelligo.' We reach the conception by reflecting upon our feelings and thoughts in the order in which they succeed each other in the mind: without enduring perceptions, we should not have the idea of duration or time. The idea of succession cannot be derived from motion; on the contrary, the latter has to be translated into a mental sequence. The succession of feelings or thoughts always occupies a perceptible portion of time, even when its rapid passage leaves us unconscious of the fact, while the movement of the hour-hand or the growing grass is too slow for us to observe. Time and its measurement are something different. Time in itself always follows the same even, uniform course. But we can never say of any particular measure that we adopt, that its parts or periods are perfectly equal. Certain irregularities

have been detected in the motion of the sun, which passed for so long as the most reliable measure of time. The movements of the pendulum also are subject to variations arising from unknown causes. It is not possible to prove with absolute certainty the exact equality of two immediately successive periods, and we have to rest satisfied with apparent equality. The idea of time, like that of space, conducts us necessarily to that of infinity, i. e. to the idea of eternity. The idea of time, then, also springs from the two universal sources of knowledge, feeling and reflection. The disappearance and return of ideas in the mind gives us the notion of succession; the perception of identical existence, by the abstraction of these representations, gives us the idea of duration, while by unrestrained addition and multiplication of this given duration we attain the idea of eternity[1].

Time and space have much in common: both are infinite and cannot be limited by the world of matter. It is always possible to think away bodies and motion, but the most perfect mind would be unable to conceive limits to space and time. I can imagine space without bodies, but I cannot imagine the non-existence of space. The portions of time and space which we assign for the measurement of things are only distances in the boundless uniform ocean of eternity and infinity. Everything has its when and where, in relation only to other known existences. Time and space consist indeed of parts, but are reckoned as throughout of similar nature and as simple ideas; each portion of time is itself time, each portion of space, space. We have as little conception of their smallest atoms as of their limits, we can always diminish or increase the unit thought of. The parts

[1] Essay ii. cap. 14 and 17.

of both are absolutely indivisible; continuity is a necessary property of space and time.

The differences are that space extends itself in all directions, while time has only one dimension. The present moment is the same for all things, while no two things occupy the same space. As the parts of time are incapable of permanence, so are the parts of space of succession [1].

But of all ideas, there is none so simple, so familiar, and so peculiar to humanity as that of *unity* and *number*. Angels and men, objects, thoughts, things temporal and extended, all are united in number. Everything that the senses and the ideas derived from them are unable to grasp, on account of its imperceptible or overwhelming size, becomes fixed and definite as soon as it is conceived numerically, and here no limit is assigned. Numeration consists only of addition and subtraction, and both operations may be continued to infinity. Words seem even more necessary and indispensable for numerical combinations than for the formation of any of our other ideas: to a tribe that has no word for *six*, everything above five appears as an indefinite many, and the difficulty, which children have in learning to reckon, arises partly from inability to group their ideas in the strict logical order which has to be established among ideas of number [2].

The infinity of space and time and the infinite divisibility of matter depend upon this unbounded power of addition and subtraction. Such infinity transcends all human comprehension. Hence the existence of God, who fills the infinite space and endures throughout eternity, is an object of faith only. For our reason eternity and infinity are negative ideas,

[1] Essay ii. cap. 15. [2] Ib. cap. 16.

and the attempt to give them positive significance has only resulted in controversy and contradictory opinions, since our limited powers of comprehension fail before the overwhelming elevation of the object[1].

In regard to the idea of Force, Locke was still much under the influence of the Cartesian distinction. The modifications of things lead us to assume everywhere active and passive potentialities. Properly speaking, matter is wholly passive, while the supreme infinite mind is everywhere active. We cannot acquire the idea of action from sensation, but from reflection, for there are in general two kinds of action only, *motion* and *thought*. The idea of thought cannot possibly be derived from bodies, and as for motion, bodies always receive it from without; it is therefore passive rather than active. For even when one body imparts to another the movement it has itself received, this only spreads and communicates what the body had passively received. Sensation gives us therefore a very obscure impression of the first beginning of action, as the origin of motion. If we attend to the processes of our own mind, we see much more clearly and accurately that it is *we ourselves* that originate and continue thought, that *we ourselves* produce or arrest various kinds of motion, in accordance with our thoughts, in other words, according to our arbitrary choice.

The understanding is the faculty of perception and intelligence, but the power of self-determination towards motion or rest, thought or no thought, is called will. We must however be on our guard against assuming the existence of separate activities or regions of the mind, corresponding to these names. The power of acting, in accordance with one's own

[1] Essay ii. cap. 17.

choice or mental inclination, is called liberty. Its opposite is not necessity, but the want of freedom: for if I will what is necessary, I am free. The soul, when awake, is always thinking something; it is free in so far as it is able to direct and concentrate its thoughts and order them in regular sequence towards what is agreeable to it. So far as a man's power of acting or not acting, in accordance with his own thought and choice, extends, so far extends his freedom. Freedom thus concerns action only, not will. It is a direct contradiction to speak of the freedom of the will. What manner of thing could that be which had equal freedom to will and not to will? Clearly a monstrosity, a chimæra. On the contrary, the more precisely the will is determined or conditioned, the more it struggles after freedom and the less it submits to be determined from without[1].

Locke also wrestled gallantly with the idea of substance, showing it to be an obscure, unknown something, in which we combine a particular aggregate of qualities or predicates. If any one inquired what is the subject in which this weight and that colour reside, and was told, These solid and extended parts—he might ask again, What is the subject of these extended parts? which would place us in the same difficulty as the Indian, who, after saying that the world rested on the great elephant and the elephant upon a great tortoise, could only suppose the tortoise to rest on 'Something, I know not what.' We are like children, and always seek some substitute, when clear ideas fail us.

'Material substance' and 'immaterial substance' are something which we imagine underlying and supporting, now the sensible, perceptible properties of

[1] Essay ii. cap. 21.

external objects, now the forms of consciousness which we perceive in ourselves. But what this thing may be, we know as little in the one case as in the other. Forces and effects constitute the major part of our ideas of substance: the magnet draws the iron, the fire melts the gold; and the simple ideas of thought, will, etc. are as clear as those of solidity and extension. But we know as little about the nature of material substance as of the substance of mind. The qualities of bodies, such as cohesion and weight, are just as incomprehensible as the thought and will of the mind; and the simplest mechanical principle of the communication of motion by impulse from one body to another, is equally incomprehensible. On the other side, however, though we cannot possibly conceive the production of the effect, we have constant experience of all our voluntary motions, as produced in us, *by the free action or thought of our own minds* only[1]. It should therefore be considered, whether it is not the nature of spirits to be active, and of matter to be passive. And as all created spirits are at once active and passive, it might be conjectured that 'created spirits are not totally separate from matter[2].'

In a word, all our ideas of substance are but '*collections* of simple ideas with a supposition of something to which they belong and in which they subsist;' and most of the simple ideas that make up our complex ideas of substances, are not positive qualities, but 'powers,' a fitness or capacity to operate and be

[1] An easy leap across the gulf created by Descartes, which sounds at least like a relapse into the old errors.

[2] Essay ii. cap. 23. § 28. The Leibnizian doctrine of monads is clearly anticipated here.

operated on by various other substances (relativity, causal relation).

These short extracts will suffice to mark Locke as a worthy fore-runner of Kant. He led vigorous onslaughts against the strongholds of the ancient dogmatism, and that at the very points where Kant was to force an entrance afterwards. Locke shook the walls, Kant laid them in ruins.

Locke proclaimed the impossibility of forming any clear idea of substance in general; he insisted upon space, time, and causality as the most important elements of human knowledge, a recognition which virtually establishes the relativity of knowledge; and he proceeded lastly to trace back all our knowledge to sensation and reflection, and to propose the *origin of ideas* as the chief problem of philosophy. In all this he was reintroducing into philosophy a principle which had threatened to disappear altogether before the doctrine of substance, and especially of the *una substantia* of Spinoza, namely, the principle of individual existence. It is not substance that thinks, but the individual being, opposed to the whole remaining universe, and receiving it into his consciousness by sensation and reflection—man himself.

The Self of a thing is that proper particular existence of it in space and time whereby it is absolutely separated and distinguished from other things; as a unit. This applies to finite things. The existence of God, without beginning or end or limit, can have no relation to space or time. But everything except God, whether bodies or spirits, must have a definite beginning in time and space, permanence, unity, conditioned throughout in time and space, an untransferable existence of their own: all this is the *principium individuationis*. In the case of composite things it is

necessary to distinguish carefully what it is that properly constitutes their unity. A mere mass consists simply of so many material atoms, and continues the same however differently they may be intermingled, but it is quite otherwise with the unity of organisms, plants, or animals. In these the material particles change continuously, there is continuity and community of life, of organic movements or functions.

Personal identity consists of continuity of consciousness, whereby a rational being can bring his present existence into connection with his former action and thoughts, and consider itself *as itself*, the same thinking thing in different times and places. The question about substance is thus quite indifferent. Continuous consciousness, whether it subsists in one and the same undivided substance, or in several substances, received successively into the organisation, this alone is the essence of personal identity. Just as animal identity exists, notwithstanding the continuous change and succession of the material particles which compose the animal body, so personal identity may be preserved through similar succession and change of substance. Besides, why may not several particular spirits unite together to make up one single consciousness, as many particular bodies are united to build up a common life. *Person* is a judicial term, and personality the foundation of all responsibility. Every action outside the present moment must, in so far as the doer is to be held accountable for it, be brought into the unity of consciousness, and be recognised by himself as belonging to him, and so united with his actual self[1]. This important and new manner of view is completed and developed in the philosophy of Leibniz.

[1] Essay ii. cap. 27.

We now come in conclusion to Locke's highest and most admirable merit, his insight into the nature of *general ideas*, and the connection between the latter and *language*.

The faculty of abstraction and the general ideas arising from it are proper to man alone and form the true nature of his reason.

Abstraction is the faculty of generalising under a certain name the ideas received from single things. Everything that has to do with the real existence of these single things, such as time and place and other concomitant qualities, must be separated, and the idea alone presented to the understanding apart, and made applicable, under a particular name, to all the things in which it is met. The same colour which I perceive here in milk, there in snow, becomes under the name *white* a general idea for all things in which this colour may at any time be found. Even if it might be doubted whether animals do not, up to a certain point, combine and extend their perceptions, this faculty of abstraction at all events constitutes a great advantage or superiority possessed by man. As animals have never been known to make use of words or other signs to express any kind of general idea, it is impossible to conclude otherwise than that they are destitute of the power of forming general ideas by abstraction. Imperfection of the organs cannot be the cause of the want of speech, for many animals can articulate several words quite clearly, and a man who, through imperfection of the organs, is unable to speak, finds means of expressing certain general ideas by the use of other signs.

Perhaps the true and peculiar distinction between the human species and other animals consists in this faculty of abstraction. Among other animals the

activity of the mind is restricted within the narrow circle of isolated impressions from external objects, and their ideas are incapable of widening by abstraction.

But the origin of all general ideas is to be found in sensible perceptions[1]. The simple ideas thence derived cannot be defined. No explanation will convey any idea of colour to the blind. Words cannot help, for they are only sounds. To endeavour with words to make any one, who has not had experience of the sensations, realise the taste of an apple, or its red and white colour, is the same as trying to make sound visible and colour audible, or rather to make hearing a substitute for all the other senses, so that we should taste, smell, and see with our ears. All immaterial ideas are originally taken by metaphor from ideas of sensible perception[2].

The things themselves, and the ideas which we have of them, and which we characterise by general names, are naturally altogether different. The former are *real*, the latter *nominal* essences. Gold is to us something yellow, heavy, solid,—but we are far from exhausting its inner qualities by this conception. How different is our idea of *man* from the real being. If I had such an idea of man as the divine Artificer, who beholds all the inmost springs of his bodily and

[1] Essay ii. cap. 2. Cf. Schopenhauer (Welt als Wille und Vorstellung, i. p. 48): 'Although conceptions differ fundamentally and materially from sensible intuitions, they stand in a necessary relation to the latter, without which they could not exist, a relation which accordingly makes their whole nature and essence. Reflection is necessarily an imitation, a repetition of the primitive images of the world of intuition, though an imitation of an unique kind in a wholly heterogeneous material. The whole world of reflection rests upon that of intuition as its base.'

[2] Essay iii. cap. 3 and 4. Compare with this the observations of Max Müller (Lectures on the Science of Language, ii. 372, ninth ed.).

spiritual nature, this would bear the same sort of relation to my present notion as the conception of the artist who executed the Strassburg clock does to that of the peasant who stands gaping at it from below. The true reality of things, the so-called *formæ substantiales* themselves must always remain incomprehensible to us. In nature herself there are innumerable transitional links connecting different species, which escape us, but which make a continuous chain from the lowest inorganic being up to man. We only classify them according to the predicates and qualities which we regard as belonging to the essence of each, without knowing whether they are so really. A question which has to be answered in reference to all classification according to genera and species is this: Was it the intention of nature to elaborate her works according to a definite number of unalterable forms or types, and is this number really continuously maintained throughout the production of things? As long as this question remains unanswered, our classifications cannot be founded upon realities, but are only arranged in accordance with certain sensible phenomena.

The difference between real and nominal essence is indicated by language. I can say, An extended solid body moves, but I cannot say, Extension and solidity move, though my conception of body includes no other predicates than these. Similarly I can say, A rational animal is capable of sociability and speech, but not, Reason and animality are capable of sociability and speech[1]. Our thought therefore, as embodied in language, distinguishes itself between the abstract and the concrete.

[1] Essay iii. cap. 6.

Things are held together in nature by the unity of their essence, as their different qualities are held together by our conception in the unity of thought. The things themselves, too, are types which we endeavour to embrace in our general ideas, without however succeeding in ever reaching their individuality. Ideas of mixed modes, on the other hand, may include the utmost variety of objects, furnished by the widest experience. 'What a vast variety of different ideas does the word triumphus hold together and deliver to us as one species!' and so of procession, inquisition, and other words of the same kind[1].

The following acute remark, if logically followed out, would have led to very important conclusions: 'From what has been before said, we may see the reason why, in the species of artificial things, there is generally less confusion and uncertainty than in natural species. Because an artificial thing, being the production of a man, which the artificer designed, and therefore well knows the idea of, the name of it is supposed to stand for no other idea, nor to import any other essence, than what is certainly to be known and easy enough to be apprehended. . . . Why should we not think a watch and pistol as distinct species one from another as a horse and a dog, they being expressed in our minds by distinct ideas, and to others by distinct appellations[2]?' The conclusion that the earliest and most natural ideas of men, and so also their earliest vocal expressions, must have originated *from their own creations* might have been deduced from this observation. In another passage too Locke seems to skirt unconsciously the edge of the discovery that language originated from action, and

[1] Essay iii. cap. 5. [2] Ib. cap. 6. § 40, 41.

more particularly from common action. 'It is worth our observing,' he says, 'which of all our simple ideas have been most modified, and had most mixed modes made out of them, with names given to them; and those have been these three; thinking and motion (which are the two ideas which comprehend in them all action) and power, from whence these actions are conceived to flow.... For *action* being the great business of mankind, and the whole matter about which all laws are conversant, it is no wonder that the several modes of thinking and motion should be taken notice of, the ideas of them observed, and laid up in the memory, and have names assigned to them; without which laws could be but ill made, or vice and disorder repressed. Nor could any communication be well had amongst men, without such complex ideas with names to them[1].'

The following remark is equally profound, that 'many words which seem to express some action, signify nothing of the action or modus operandi at all, but barely the effect.... When a countryman says the cold freezes water, though the word freezing seems to import some action, yet truly it signifies nothing but the effect, viz. that water, that was before fluid, is become hard and consistent[2].'

Locke begins by professing his own ignorance 'how the ideas of our minds are framed, of what materials they are made, whence they have their light, and how they come to make their appearances,' and appeals to experience as his only guide; but this initial doubt prevailed on him to direct the illuminating power of his genius towards this obscure region, in which he cast new and important light upon the origin of ideas, or the function of the thinking

[1] Essay ii. cap. 22. § 10. [2] Ib. § 11.

faculty, so furnishing at once guidance and material for future enquirers.

Language and ideas are thus the two inestimable means of all human knowledge. But in them too and their imperfection the true causes of most errors, false or premature opinions, and endless embittered and profitless controversies, are to be found.

Among these causes the first and most important is, that the majority of men imagine that whenever a word has been given them, a sufficient explanation has been given also. Instead therefore of subjecting the content of the idea to a careful examination, they utter like parrots the words they have glibly learnt from childhood, and do not think at all. To this must be added the difficulty, not to say impossibility, of securing that two men shall think the same thing, when using the same words. No man has the power to make others have exactly the same ideas in their minds that he has, when they use the same words that he does. In regard to the most important ideas, those of morals, do not we learn the words before we have the least conception of the things, and then afterwards join to them some idea as best we can?

Hence the endless disputes about religion, faith, grace, etc., while every one believes he must make his own ideas, clear or hazy as the case may be, the standard of the meaning of the words. Most of those who are readiest to dispute about religion and conscience, church and creed, might and right, would be silenced if they were summoned to keep to the matter and not to words with which they perplex themselves and others. Most controversies are mere logomachies, in which each side thinks something different or nothing at all *apropos* of the words they

agree in using. By paying close attention to the meaning and the matter itself, without attaching themselves to words and names, men would soon come to an understanding, were it not that passion and interest withhold them from confessing the truth. Language ought to serve for the acquisition of knowledge and its ready communication. Words without clear and definite ideas are empty sound. And he who did but fill folios with obscure, unintelligible words, would gain as little knowledge as any one who studied the titles and not the contents of the books in a large library. Language and ideas belong essentially to one another. 'He that has complex ideas, without particular names for them, would be in no better case than a bookseller, who had in his warehouse, volumes, that lay there unbound, and without titles which he could therefore make known to others only by showing the loose sheets, and can communicate them only by tale[1].' The man is unable to communicate his complex ideas for want of words, and therefore has to use words for all the simple ideas which go to make up the complex one.

Locke also pronounces a severe sentence of condemnation upon 'the obscure and unintelligible discourses and disputes' of scholastic philosophy, words of righteous indignation which are just as crushingly applicable to modern scholasticism as to that of the Middle Ages. He speaks of the practical inutility of the 'curious and inexplicable web of perplexed words' with which these profound doctors win commendation, all the more because they could

[1] Essay iii. cap. 10. § 27. Kant has used the same image to illustrate the relationship of ideas and intuitions. The same idea was clearly floating in Locke's mind, though he thought of ideas instead of intuitions, and words instead of ideas.

not be understood, and continues: 'Nevertheless, this artificial ignorance, and learned gibberish, prevailed mightily in these last ages, by the interest and artifice of those, who found no easier way to that pitch of authority and dominion they have attained than by answering the men of business and ignorant with hard words, or employing the ingenious and idle in intricate dispute about unintelligible terms, and holding them perpetually entangled in that endless labyrinth: . . . retreats more like the dens of robbers or holes of foxes, than the fortresses of fair warriors; which if it be hard to get them out of, it is not for the strength that is in them, but the briars and thorns, and the obscurity of the thickets they are beset with. For untruth being unacceptable to the mind of man, there is no other defence left for absurdity, but obscurity[1].'

One of the greatest and commonest sources of error, which seems almost unavoidable as long as human thought is associated with words and ideas, lies in the confusion of words with things, i. e. the illusion that there must necessarily be a self-subsisting reality corresponding to the word. Thus the Peripatetics take their substantial forms, their vegetative souls, the *horror vacui*, and even the categories for actual beings, while the Platonists did the same with their ideas, and the other sects with their fundamental principles. 'How many intricate disputes have there been about matter, as if there were some such thing really in nature, distinct from body!' and yet this distinction only exists in our imagination, for 'body stands for a solid, extended, figured substance, whereof matter is but a partial and more confused conception, leaving out extension and figure.' The principal

[1] Essay iii. cap. 10. § 8, 9.

cause of this eternal error is—as Locke acutely saw—tradition. It would be difficult to persuade any one that the words which were used by his father or schoolmaster, the parson of the parish or some reverend doctor, signified nothing that really existed in nature[1].

The method of the schools, to lay down the most general principles, and then to deduce the rest from these, as from eternal truths, is uncongenial to Locke. Nothing, he holds, can be inferred from these propositions; everything turns upon the correctness of the ideas involved in them. The principle of identity (what is, is) and of contradiction (the same thing cannot at the same time both be and not be) may lead in that way to the most contradictory results. If any one agrees with Descartes in defining body to be nothing but extension, he may easily demonstrate that there is no vacuum (i. e. no space void of body) by the maxim what is, is; but if the note of solidity is added to the conception of body, the existence of space without body will be as easily demonstrated as the contrary was by Descartes[2]. All these principles, which are extolled as the bulwarks of truth, can afford no protection against errors arising from the careless or confused use of ideas.

Locke's endeavour was to give in all cases a fixed and definite sense to the ideas which have been handed down to us by the tradition of generations and by means of language, and which have been so far obscured and confused by the countless accidents attendant on their origin as to be unavailable for philosophic use without such revision. A profound insight into the nature of speech and reason must convince us that this is impossible to a single mind,

[1] Essay iii. cap. 10. § 15, 16. [2] Essay iv. cap. 7. § 11, 14.

that in fact our whole thought is bound up with these forms, and accomplishes itself according to them by a kind of natural necessity, so that it is only a matter of development, of slowly ripening intelligence, when the human mind frees itself gradually from the prejudices and conceptions of the past, and substitutes for its former childish Logic, which contained all the truth then accessible, a purified, more adequate, self-conscious logic of ideas. The solar wheel which, revolving in or with the heavens, was for long millenniums among the most certain facts of the primitive races,—the chariot of the sun, driven by Helios above the brazen vault, succeeded it;—then a vast fiery disk, and, lastly, a huge central body round which our earth revolves, held by the invisible band of attraction. And now we have to confess that this last power, attraction, is no more intelligible to us to-day than the divinities of the past, and will have no doubt in time to make way for a clearer and more complete conception. Thus the growth, reformation, and transformation of ideas, constitutes itself the very process of rational development. We, however, whether we choose or no, are subject to this rule, and the sum and substance of all the ideas of a period is only the expression of the prevailing view as to the world at large.

The great problem of the connection and relation between the spiritual and the material world is likewise touched upon by Locke and expounded upon Cartesian principles: 'All power relating to action, and there being but *two sorts* of action, whereof we have any clear idea, viz. *thinking* and *motion*; let us consider whence we have the clearest ideas of the powers which produce these actions. Of thinking, body affords us no idea at all, it is only from reflection

we have that[1].' 'There are but two sorts of beings in the world, that man knows or conceives. First, such as are purely material, without sense, perception or thought. Secondly, sensible, thinking, perceiving beings, such as we find ourselves to be. . . . It is as impossible to conceive, that ever bare, incogitative matter should produce a thinking intelligent being, as that nothing should of itself produce matter. . . . Matter by its own strength cannot produce in itself so much as motion: the motion it has must also be from eternity, or else be produced and added to matter, by some other being more powerful than matter; . . . yet matter, incogitative matter and motion, whatever changes it might produce of figure and bulk, could never produce thought. . . . If we suppose bare matter, without motion eternal; motion can never begin to be; if we suppose only matter and motion first, or eternal; thought can never begin to be[2].' But if we suppose matter itself to be cogitative, fresh difficulties arise, for the question presents itself, whether every particle of matter thinks? And if this is denied, the unanswerable question remains, 'how a composition of particles of matter, each whereof is incogitative,' is to form a whole, possessing the faculty of thought. The only remaining hypothesis is that of an eternal intelligent Being, who has created matter out of nothing. If it is objected that we cannot conceive this, he replies, neither can we conceive how our bodily limbs are moved by our own will. 'This is matter of fact which cannot be denied: explain this and make it intelligible, and then the next step will be to understand creation. For the giving a new determination to the motion of the animal spirits (which some make use of to explain

[1] Essay ii. cap. 21. § 4. [2] Essay iv. cap. 10. § 9, 10.

voluntary motion) clears not the difficulty one jot.... If you do not understand the operations of your own finite mind, that thinking thing within you, do not deem it strange that you cannot comprehend the operations of that eternal, infinite mind, who made and governs all things, and whom the heaven of heavens cannot contain[1].'

Here Locke, like all other philosophers, resorts to the Deity, who accomplishes the miracle which to us is incomprehensible. But in another passage which has called forth loud and repeated eulogy from Voltaire, and violent attacks from bigots, he admits the possibility of matter being endowed by God with the property of thought: 'We have the ideas of matter and thinking, but, possibly, shall never be able to know whether any mere material being thinks, or no.... We know not wherein thinking consists, nor to what sort of substances the Almighty has been pleased to give that power, which cannot be in any created being, but merely by the good pleasure and bounty of the Creator. For I see no contradiction in it that the first eternal thinking being should, if he pleased, give to certain systems of created matter, put together as he thinks fit, some degree of sense, perception, and thought. . . : What certainty of knowledge can any one have that sense-perceptions, such as e. g. pleasure and pain, should not be in some bodies themselves, after a certain manner modified and moved, as well as that they should be in an immaterial substance upon the motion of the parts of body? Body as far as we can conceive, being able only to strike and affect body; and motion according to the utmost reach of our ideas, being able to produce nothing but motion; so that when we

[1] Essay iv. cap. 10. § 18, 19.

allow it to produce pleasure, or pain, or the idea of a colour or sound, we are fain to quit our reason, go beyond our ideas, and attribute it wholly to the good pleasure of our Maker. . . . It becomes the modesty of philosophy not to pronounce magisterially, where we want that evidence, that can produce knowledge. And therefore it is not of such mighty necessity to determine one way or the other, as some over-zealous for or against the immateriality of the soul have been forward to make the world believe. Who either, on the one side, indulging too much their thoughts, immersed altogether in matter, can allow no existence to what is not material; or who on the other side, finding not cogitation within the natural powers of matter, examined over and over again by the utmost intention of mind, have the confidence to conclude that omnipotency itself cannot give perception and thought to a substance which has the modification of solidity. He that considers how hardly sensation is, in our thoughts, reconcileable to extended matter; or existence to anything that hath no extension at all, will confess that he is very far from certainly knowing what his soul is. It is a point which seems to me to be put out of the reach of our knowledge. . . . Since on whichever side he views it, either as an unextended substance, or as a thinking, extended matter; the difficulty to conceive either, will, whilst either alone is in his thoughts, still drive him to the contrary side. An unfair way which some men take with themselves who, because of the unconceivableness of something they find in one, throw themselves violently into the contrary hypothesis, though altogether as unintelligible to an unbiassed understanding[1].'

[1] Essay iv. cap. 3. § 6.

This argument serves Locke as an illustration to prove that our knowledge is limited, not only by the scanty number and imperfect nature of our ideas, but also by its failure to come up even to these. On the contrary, in the attempt at their application we become entangled in doubts, difficulties, and contradictions. Locke might have drawn hence the conclusion that the *merely* empirical origin of our ideas was not to be accepted unreservedly, since *mere* experience, even in the condensed form of ideas, can never fall into self-contradictions. Some other element must therefore enter into the formation and comparison of ideas, some interpreting and explaining faculty must co-operate, the unconscious postulates of which are the subject of metaphysics. The incompatibility of the ideas dealt with here may however be easily explained. It proceeds from the fact that something has been included in each of the conceptions which the other absolutely excludes. Locke conceived matter as extended, consisting of parts, moveable, *passive*, and mind as alone conscious, thinking, perhaps also moving, in any case *active*. Such ideas must naturally and for ever exclude each other. Truth can only be reached when it is seen that thought has separated, by abstraction, what in reality never appears as separate, or in other words, that not one of our ideas corresponds to a true reality, but that all are woven with a woof of ideality. Locke did not go beyond this modest attempt to assert the possibility that a material being might at the same time be a sensitive one. Indeed he seems to have looked with surprise at his own audacity, for in the tenth chapter of the same book he weakens the force of his argument by proving the opposite.

To sum up once more the great achievements of

this fertile and vigorous thinker, we have to reckon as real and novel additions to the store of philosophic consciousness,—

1. The empirical, observant study of the human reason, as the gift most characteristic of mankind and the source of all higher knowledge. The perception that *general ideas* are the true objects of the reason; that they originate naturally, and are perfected in men by abstraction; an intimation of the connection between them and language; the statement of the problem as to the origin of these ideas; the tracing them back to sensible impressions, and the indication of the connection between sense and reason.

2. From what has been said, it follows that the *individual* thinking man is the true subject of all knowledge. All his ideas and thoughts proceed equally from *individual* perceptions or contact with the external world. The necessary limitation of all knowledge follows.

To appreciate the new truths at both these points it needs but to contrast the undeterminate substantia cogitans with its innate ideas and eternal truths. The reality of the individual is maintained in contradistinction to the mere *mode* of Spinoza. The idea of development becomes possible, as the reason obviously passes through a course of development. And thought, represented by Spinoza as accomplishing itself by the same strict causal laws as everything else in mind and body, was fertilised and vivified by the recognition of laws and functions proper to itself.

3. The idea of *substance* was shown to be inaccessible to human knowledge, and its origin was referred to the nature of thought.

4. The distinction between our sensible impressions and the true qualities of objects, between *qualitates primariæ* and *secundariæ*, points the way to the future distinction between things as thought or imagined, and things by themselves.

The gaps and imperfections of the Lockian doctrine are :—

1. The hesitation between individualism pure and simple, which can only conceive things as they are given by the senses and imagination[1], and can therefore never go beyond its subjective standpoint, and the assumption of an objective world, actually existing *in itself* in space and time.

2. This indecision prevented Locke from entering upon a more thorough investigation of the nature of reason, and showing what is originally proper to reason and what nature and characteristics have grown up and been developed through the reception of sense-impressions. To Locke the mind appeared as an originally dark room, into which rays of light from the outer world penetrate by certain rifts and cracks, and so increase and complete the thinking faculty. The active side of this faculty, however, is much neglected and often wholly overlooked, while the analysis of reason has obviously to occupy itself most with this; the nature of the senses and conjectures as to the true nature of the outer world being of comparatively little consequence.

3. Thus the whole function of thought and rational

[1] 'I, as an individual, am fixed and determined as the subject of knowledge, and it is impossible that I should know the finite object in itself, much less the infinite. I can only know either of these indirectly, in so far as they come within the range of my consciousness, in so far as they are represented in my sensations and my thoughts.'

knowledge appears as a process effected from and by the world of sense without. 'According to Locke, the *real*, i.e. matter, generates images or the *ideal* in the knowing mind by impulse or shock. We have thus here a fine massive realism, which, provoking contradiction by its very exorbitance, occasioned the idealism of Berkeley[1].' And as Locke, in accordance with his strict empiricism, represented the law of causality itself as a discovery from experience, he suggested Hume's doubt, who declared the whole causal conception to be unreal and naught, and so in his turn gave occasion directly to the profound investigations of Kant.

4. Locke's profound and important view that general ideas are the true objects of thought was not as much utilised and developed by him as the importance of the subject and the simplicity of the principle allowed and required. It was necessary, and he himself held it to be the chief task of philosophy, to examine carefully into the origin of ideas, and that not only by means of sensible perceptions or self-observation; the origin of ideas from preceding ideas as revealed in the history of human language should have been set forth too. It is true that in the age of Locke such an undertaking would have been difficult, not to say impracticable, as the Science of Language as yet was not. Otherwise Locke would have had to surrender his erroneous belief that man can form ideas without words, and that the latter are only conventional signs for ideas already existing in thought[2].

Clearer knowledge on this point would have enabled Locke to define the concepts of thought and

[1] Schopenhauer, Parerga, i. p. 16.

[2] See Max Müller, Lectures on the Science of Language, ii. p. 75.

of ideas far more sharply, and he would not then have ascribed to mere sense-impressions the character and value of ideas. 'It is certain that the mind is able to retain and receive distinct *ideas* long before it has the use of words, or comes to that, which we commonly call the *use of reason*. For a child knows as certainly, before it can speak, the difference between the *ideas* of sweet and bitter (i. e. that sweet is not bitter), as it knows afterwards (when it comes to speak) that wormwood and sugar-plums are not the same thing[1].' The discovery that the key to the mystery of thought lies hid in language was not to ripen till a much later day. The first clear indication, besides those given by Geulinx and Locke, is to be met with in Schopenhauer, in various passages of his chief work, Die Welt als Wille und Vorstellung, especially vol. i. pp. 566–70, where he hazards the conjecture that the real categories of thought will be found in the *partes orationis*, that is to say in grammar. Very true and pertinent is his observation about Locke (ib. p. 45): 'It is very surprising that no philosopher has yet traced all the various manifestations of reason back to one simple function, which might be recognised in them all, by which they might all be explained, and which would therefore be seen to constitute the proper, inner nature of reason. The admirable Locke, indeed, describes abstract universal ideas quite rightly, as marking the distinction between man and beast, and Leibniz repeats this with complete assent. But when Locke comes, in his fourth Book, to the explanation of reason itself, he loses sight of this chief characteristic altogether, and falls into an hesitating,

[1] Locke, Essay i. cap. 1. § 15. Cf. the admirably clear refutation of this view by Max Müller, loc. cit. p. 77.

indefinite, fragmentary expression of incomplete and second-hand opinion, and the same must on the whole be said of Leibniz in the corresponding passage of his work.'

At the same time, Locke's intellectual greatness, and the extent of his influence upon the subsequent development of philosophy, is duly recognised by Schopenhauer, in the following passage: 'Locke was the first to proclaim the great doctrine, that a philosopher who wishes to prove or derive anything from ideas must first investigate the origin of these ideas, as their content and everything thence deducible must be determined by their origin, as the source of all the knowledge attainable through them.'

The history of the development of human ideas is in fact the most important, if not the only task of the philosophy of the future[1].

[1] As this truth is still only just beginning to dawn upon the general consciousness, the following utterances of a distinguished thinker, who obviously had some perception of its truth, may be quoted here: 'Locke's Critique of Reason eventuates, accordingly, in a criticism of language, which, according to its leading idea, is of higher value than any other part of his system. The important distinction between the purely logical and the psychologico-historical elements in language had the way prepared for it by Locke; but apart from the preparatory labour of philologists, little material progress has been made since. And yet by far the greater number of the conclusions which are applied in philosophic science only go, as it were, upon all fours because ideas and words are being continuously interchanged.' Lange, Geschichte des Materialismus, i. 271.

THE INDIVIDUALISTIC TENDENCY.

LEIBNIZ (1646—1716).

'Le grand secret de la vie est la permanence *des forces* et la mutation continuelle de la matière.' *Flourens*, De la Vie et de l'Intelligence.

We have seen how in Locke the individual was reinstated in his rights, the Cartesian starting-point renewed, and the *cogito* referred with increased clearness and precision to human thought properly so called. Our study of the individual thinking man is the source whence all information respecting the value, limits, and origin of knowledge must be derived. Though the *matter* of knowledge proceeds from particulars, i.e. from single perceptions, enquiry only confirmed the truth enunciated by Aristotle, that thought depends upon *general conceptions*, and that accordingly predicates and their combinations constitute the essence of all our intellectual operations.

The task which Leibniz proposed to himself was to give the individual a place in the self-subsisting world outside our knowledge, and to attempt an interpretation of the universe in which, starting from individuals and particulars, whose dependence from and co-operation with the whole should be recognised, a certain independence and self-subsistence should also be recognised as constituting their true essence.

The individual separate existence of things finds

its first expression in the atomic theory of Demokritos and Epikuros. This corresponds to the natural course uniformly taken by the human reason, which always begins by looking for its principles in the objective world, and only discovers at a later time their true source within itself. It is therefore nothing strange that the multiplicity of sense-perceptions should receive their first explanation from the objective unity of the external world. But what lends its real philosophical value to this idea is the *unity of nature*, unconsciously underlying the multiplicity of individuals and recognised by the process of abstraction, in which reality is conceded only to those sensible qualities of things which admit of *quantitative* determination, such as form, position, motion, weight. And these are the same qualities which constitute the base of the mathematical view of nature, and form, in other words, the true nature, the *qualitates primariæ* of matter, recognised by all true science and all later philosophy, including that of Descartes, Spinoza, Locke, Leibniz, and Kant.

A thinker like Leibniz, who early recognised the profound significance of individual existence, was naturally attracted towards the atomic theory, while yet he could not fail to discern its incompleteness, and its collapse at the very point where the real difficulties of the philosophic problem begin. From this point of view his own account of his earlier days, given in a letter to Remond de Montmort[1], is interesting: 'I remember that, for days together, I used to walk up and down in a little wood near Leipzig, called the Rosenthal, considering whether I should retain the substantial forms. The mechanical view gained the upper hand at last, and led me to mathe-

[1] Leibnitii Opera Philosophica, ed. Erdmann, p. 702.

'matics. But when I sought for the ultimate principle of the mechanism in the laws of motion I returned to metaphysic, from the material to the formal, to the assumption of Entelechies, and at last discerned, after often revising and developing my ideas, that monads, or simple substances, are the only real substances, and that individual things are but phenomena, though indeed well-founded and mutually dependent phenomena.'

It is difficult for the present generation to realise the significance of the Leibnizian system. We must recall the vast contradictions and inconsistencies in which human thought had landed itself before him, in order to do justice to his philosophy as the last vigorous attempt at a reconciliation of the real and the ideal worlds, instead of regarding it as a laborious concatenation of self-made difficulties.

The antagonism between individualism and universalism gives birth to opposites, which may be tabulated as follows:—

Freedom and self-determination of the individual being.	Omnipotence and predestination of the Divine Creator.
Activity, inner consciousness and intelligence.	Passivity of matter.
Unity and indestructibility of substance properly so called.	Infinite divisibility of matter.
Intellectual perception, final causes.	Absolute, invariable mechanism, efficient causes.
Atoms, according to Demokritos.	Substance, according to Spinoza.

Leibniz was an exceptionally many-sided thinker, entering, and always with some degree of creative power, upon every field of human knowledge. His attachment to Aristotle has its root in a certain intellectual affinity. The resemblance lies in the restless genius which illuminates the darkness with its

flashes and reveals new views and possibilities, but never endures long enough for a complete structure to be developed out of a single principle. Hence with him, as with Aristotle, repetitions are frequent, and abrupt transitions which disappoint expectation at the most critical moment. Kant says of him: 'The celebrated Leibniz possessed real insight, by the help of which the sciences were enriched, but he was still more fertile in conceptions for the complete execution of which the world looked in vain.' With such a temperament it is not surprising if his premises were often vacillating and insecure. He says himself in a letter to Thomas Burnet, after describing his struggles, before deciding between Aristotle and Demokritos: 'Cependant j'ai changé et rechangé sur de nouvelles lumières et ce n'est que depuis douze ans environ que je me trouve satisfait.'

The name of Leibniz is however indissolubly associated with two ideas, in his own eyes the inseparable parts of a single whole, namely, the doctrine of *Monads* and the *pre-established Harmony*. The former, though only a germ, is a lasting and valuable philosophical possession, of which we shall hardly see the full development until various antiquated prejudices have passed away. The latter, on the contrary, is a mere dogmatic artifice for evading a question which has been so stated as not to admit of solution. As however often happens, the father was most attached to his least hopeful offspring, and he was wont, especially in his later years, to return again and again to this favourite error, when in his controversy with English philosophers he wished to accentuate the agreement between his doctrine and the dogmas of Christianity.

Leibniz, who was committed to a reconstruction

of the real world, logically starts, like Spinoza, from the idea of substance. He summarily dismisses the doubt suggested by Locke as to the justice of this conception. 'The idea of substance is not so obscure, he thinks, as people imagine. What is necessary may be known of it as much as of other things; nay the knowledge of the concrete always precedes that of the abstract; and people learn to know hot things much earlier than heat[1].'

This passage would suffice by itself to show that the essential characteristic of substance, that is to say existence, was educed from concrete particulars, or, in other words, from the individual existence of the human mind, and must consequently reside also in single things.

Descartes had laid down that it was necessary in explaining things to revert always to *les natures simples;* Leibniz discerns the true *substances simples* in individual units whose true nature consists in their existence and determination, or, as he puts it in his first Dissertation, in the language of the Schoolmen, 'Omne individuum tota sua entitate individuatur.' He is thus, according to Scholastic ideas, a decided Nominalist, and holds that the particular has a claim to actual real existence.

These original units are the monads. The monads are each its own independent world, simple, indestructible, and exclusive of all remaining existence: their qualities are described as follows.

They must be immaterial, for matter is infinitely divisible, that is, destructible, and moreover matter is altogether passive: for action and intelligence to result, it must be penetrated by these infinitesimal, unextended, infinitely numerous units of which per-

[1] Nouveaux Essais sur l'entendement humain, p. 238, Erdmann.

ception and will are properties. For it is impossible that merely mechanical causes should produce anything like consciousness and perception. The monads might also be called entelechies or souls, but the latter idea is by far the most perfect. The dim consciousness which veils our perceptions in syncope may serve as an image of the simple monad [1].

It is certain that Leibniz conceived the whole world to be penetrated with these immaterial monads, and, *pro tanto*, as organic, so that nothing could exist without secret properties, individual character, and self-determination. This at least follows from his expression, 'Il faut réunir Démocrite et Spinoza;' that is to say, everything is individualised and everything is animated. He says in a letter to De Maizeaux [2], 'You do not understand what other bodily substances there are besides animals, whose complete annihilation has hitherto been erroneously assumed. But if there are in nature other living organised bodies besides the lower animals, as is very probable, as the example of plants may show, these bodies must also have simple substances or monads, which give them life, i. e. perception and will, although this perception need not be sensation. There are obviously an infinite number of possible degrees of perception, and that also among living beings.'

Similarly in the Monadologie, he says [3]: 'There is a world of creatures, of living things, animals, ente-

[1] Monadologie, Erdmann, p. 706.

[2] Opera, ed. Erdmann, p. 676. He expresses his views still more clearly in the letter to Wagner, Erdmann, p. 466: '*Natura ubique organica est*, et a sapientissimo auctore ad certos fines ordinata, nihilque in natura incultum censeri debet, etsi interdum non nisi rudis massa nostris sensibus apparet.'

[3] Monadologie, §§ 66–70.

lechies, souls in the minutest particle of matter. Every part of matter may be considered as a garden full of plants, or a tank full of fishes. But every branch of the plant, every member of the animal, every drop of its juices is again a similar garden and a similar tank. There is thus nothing uncultivated, nothing unfruitful, nothing dead in the universe, no chaos, no disorder. Every living body has a central monad or ruling entelechy, but the members of the living body are full of living things, plants, animals, each of which again has its own entelechy.'

When the time comes for describing the connection or concomitance of the monads and the material world, the same obscurity appears in Leibniz as in Spinoza, when he attempts to explain at once the unity and the independence of the two causal series, of mind and matter (p. 206 ante). The monads with their unextended immaterial nature, endued with perception and appetite, contain the true indestructible essence of substance, and so far Leibniz starts upon the original line of Descartes, according to whom consciousness is the most certain and primitive of qualities, while matter and extension sink into the rank of phenomena. Leibniz frequently expresses himself in this sense, and so to some extent, as Schopenhauer observes [1], anticipates both his own and the Kantian doctrine, 'quas velut trans nebulam vidit.'

Thus much is certain, that there can be no direct action of monads upon matter or of matter upon monads, and accordingly an appeal to the Deity as the central monad becomes necessary here. This power has so ordered everything in both worlds from the beginning, that through the whole course of time the correspondence between the two is unfailingly exact,

[1] Parerga, i. 80.

and every thought or act of will is attended by a modification of material substance, answering to it *as if* the connection between the two were causal. There are three alternative explanations, as in the case of Leibniz's well-known illustration of two clocks keeping exact time together. 1. That the same mechanism regulates the motion of both; 2. that some one from time to time readjusts their works so as to bring them again into agreement; or 3. that both were from the first so perfectly constructed as to make divergence impossible. The *influxus physicus* would correspond to the first case, but is inadmissible, since it is inconceivable that mind should act upon matter or matter upon mind. The second hypothesis corresponds to the occasional causes of Malebranche and Geulinx, which presuppose continuous divine intervention; the third hypothesis alone is worthy of the Deity, and this is the doctrine of the *pre-established harmony*.

The points of contact between Leibniz and Descartes and Spinoza, as well as those of divergence, are easily visible. The Cartesian *cogito* involves the purely subjective, individual standpoint of the ego, an intellectual being whose original properties are thought, feeling, and will. As Leibniz, and subsequently Schopenhauer, used this ego as a key to interpret the universe, they necessarily attributed to the innumerable other egos the same attributes that they had met with in their own. Leibniz is thus to a certain extent at one with Descartes and his subjective method, and with Spinoza's broad universalism. The latter brings the manifold into unity, treating it as a mere *ripple on the surface*, while Leibniz saw always the component units within the manifold [1].

[1] The metaphor used by Leibniz is characteristic of his opposition to Spinoza—that the monads are rays (*fulgurationi*) of the Deity.

The Leibnizian theory may thus be described as an exaggerated individualism, Spinoza's doctrine as an extreme universalism. Human thought is carried on *within* the universe, and is only to be explained by the help of abstraction and opposition, i. e. by individualism. Hence human thought can never succeed in looking at the world from without, still less has it the right to impose its own nature upon existence and say *Deus est res cogitans*. But it is a no less capital error to reduce everything to individual existence, and to assume the latter to subsist as an unchangeable entity through all eternity, as if all ideas, strivings, and effects crystallised in unextended points, without considering that this individuality itself is a product,—however mysterious and unfathomable one of its elements may be,—of an immeasurable world of forces around, and an equally immeasurable duration of forms of consciousness and intellectual effort, which must be taken together to account for the present constitution of the individual, its thought, and will, as actually existing.

It may be said: Spinoza represents the world as if there were no individuals, Leibniz, on the other hand, as if there were no universals. The former leaves unexplained the way in which particular things detach themselves from the universal substance and assume an independent existence, while Leibniz is compelled to resort to miracles to explain the coexistence and interaction of the monads or individual existences[1]. It is the old quarrel between Herakleitos and Demokritos.

[1] Monadologie, § 51: 'Mais dans les substances simples ce n'est qu'une influence idéale d'une monade sur l'autre qui ne peut avoir son effet que par l'intervention de Dieu, en tant que dans les idées de Dieu une monade demande avec raison que Dieu en réglant les

The opposition between matter and mind is worked out much more profoundly by Leibniz than by Descartes. According to the latter, matter is identified with extension, and becomes, together with motion, the object of purely mechanical explanation. Leibniz, on the contrary, discerns that although motion, as associated with matter, appears to us as passive and mechanical, yet, viewed in itself and traced to its true source or *fons mechanismi*, there is also an element of activity in it, the interpretation of which is to be sought in our own consciousness, and not without. Hence he distinguishes the *materia prima*, to which *form* is properly opposed, from the *materia secunda*, which is already moulded. 'Materia est quod consistit in antitypia seu quod penetranti resistit, atque ideo nuda materia mere passiva est[1].' Bodies possess a certain vis activa apart from matter; their nature includes some entelechy, soul, or something analogous to a soul. Every monad has an organised body, but there are endless grades of animation, and the lowest escape our observation as infinitely slight movements do. 'Les corps agissent selon les lois des causes efficientes ou des mouvements. Les âmes agissent selon les lois des causes finales par appetitions, fins et moyens. Et les deux règnes, celui des causes efficientes et celui des causes finales, sont harmoniques

autres dès le commencement des choses ait regard à elle. Car puisqu'une monade créée ne saurait avoir une influence physique sur l'intérieur de l'autre, ce n'est que par ce moyen que l'une peut avoir de la dépendance de l'autre. § 56. Or cette *liaison* ou cet accommodement de toutes les choses créées à chacune et de chacune à toutes les autres, fait que chaque substance simple a des rapports qui expriment toutes les autres et qu'elle est par conséquent un miroir vivant perpétuel de l'univers.'

[1] Epistola ad Bierling, Erdmann, p. 678.

entre eux[1].' Everything occurs in the world of mind as if there were no bodies, and in the world of matter as if there were no soul.

We may discern here a foreshadowing of the truth that in the slightest and most rudimentary modifications of material phenomena an immaterial principle is involved, which naturally never becomes apparent to the senses, but to which we have a key in ourselves, where we know the same power as consciousness or will.

In this way the order of beings, according to their degree of animation, or in other words, according to the elaborateness of their organisation, with its attendant of heightened consciousness, becomes intelligible to us. Leibniz is clear on this point in the letter to Wagner (Erdmann, p. 466): 'The modifications of the antitypy (impenetrability) are only changes of place, the modifications of extension are only changes of magnitude and form: in all this matter appears as purely passive; but in motion itself there must reside an internal principle which is quite different from the matter that is moved.' Schopenhauer calls this principle Will, and does not ascribe consciousness to it; Leibniz, after Aristotle, calls it Entelechy, and sees in it something analogous to the human soul, and therefore some kind of consciousness, which may be conceived at many degrees of illumination; and, with far more justice than Schopenhauer, he gives it accordingly the name of *perception*. 'I reply, thirdly,' he says, 'that this active principle, this prime Entelechy, is in truth also an indestructible vital principle; endued with the faculty of perception. It is this which, in the case of animals, I regard as their souls. In assuming matter to be in all cases attended with

[1] Monadologie, § 79.

principles of activity, I assume also everywhere vital principles which perceive, or monads, so to speak metaphysical atoms, which are indivisible and indestructible.' 'As to what regards the soul, this may be taken either in a wider or a narrower sense. In the first sense, it is the same as life itself, a principle of inward activity existing in a simple thing or monad and corresponding to its external activity. This parallelism between the outward and the inward, or representation of the former in the latter, of the complex in the simple, of the many in the one, really constitutes perception, and this is not the exclusive possession of animals, but is shared by all perceiving beings. In the more restricted sense, the soul is a more noble kind of life, a life of feeling, not the bare capacity for perception, but conscious feeling, with which attention is associated. The third and highest kind of soul is the human, the anima rationalis, whose essence consists in the power of drawing general conclusions: ut ergo mens est anima rationalis, ita anima est vita sensitiva et vita est principium perceptivum. There is also a *perceptio insensibilium*, as I should be unable e. g. to perceive green, unless I could at the same time perceive yellow and blue, by a mixture of which colours it is made. A soul or an animal before its birth and after its death differs from those now living, not in its nature, but only in its place in the order of things and its degree of perfection. Matter, or the outer garment, changes continuously; it is a natural mechanism, always in flux; the organism is like the ship of Theseus, of which every part had been renewed; the organic form is constantly renewed from the monads. Genii cannot exist without bodies, but have far more perfect ones, and perhaps have the power of *changing their bodies.*

The same analogies run through the whole of nature, and it is easy to distinguish the finer from the coarser elements, both of which follow the same kind of course. God alone is true substance, without material admixture, since he is always *actus purus*, not like matter, endowed with the power of suffering. All created substances are clothed with matter, they have the property of the antitypy, which effects by natural means that one thing shall always be external to another and not penetrated by the other.' He speaks in the same way in his Commentatio de Anima Brutorum (Erdmann, p. 463): 'No one will believe that there is any power of perception in a mill, a watch, or similar artificial machines. However delicate the organic mechanism may be, we can still imagine it indefinitely enlarged, so that we could move about among its parts as we do in a mill, and still we should find everywhere parts only, not perception. Hence it follows certainly that it would be impossible to deduce either perception, activity, or motion from mere mechanism or *materia nuda*. It is therefore necessary to assume something in addition to matter which shall serve to explain at once the inner activity or perception, and the outer activity or motion. We call this principle substantial, vis primitiva, Entelechy—in a word, soul. This active element must be conjoined with the passive to constitute *substantia completa*.'

These passages show us the salient points of the Leibnizian theory. One admires the intellectual application expended in separating what is naturally united, so that throughout motion represents the fleeting, ephemeral, purely passive aspect of matter, while nevertheless a kind of consciousness is associated

with this, having nothing in common with the motion to which it corresponds,—but so perfectly regulated by the Divine watchmaker that the two continue in perfect correspondence throughout eternity. And human freedom is to be preserved at the same time, notwithstanding the regular course of the world on its mechanical side alone makes all divergence from the prescribed course impossible! Schopenhauer, who is seldom quite just to Leibniz, speaks on this point with great severity[1]: 'The monstrous absurdity of his assumption was promptly pointed out by a contemporary, Bayle, who placed the necessary consequences in the clearest light.' But he adds: 'Yet the very absurdity of the hypothesis which a thoughtful mind was brought to accept, itself proves the magnitude, the intricacy, and the difficulty of the problem attempted, and how impossible it is to evade the difficulty by mere denial of its existence, as has been attempted in our days.'

The premisses upon which Leibniz based his system were partly errors which have since his day become exploded, and partly truths which have not even yet received due recognition. I reckon among the former:—

1. The view established by Locke and Newton, with the concurrence of the Cartesians, that matter is something purely passive, which received its first impulse from the divine hand and continues to revolve soul-lessly, retaining always the same *quantum* of motion as at first, and forming thus an invariable mechanism explicable according to mathematical rules.

2. That mind is necessarily *simple*, and therefore cannot be a quality of *extended* matter. It is thus

[1] Parerga, i. p. 8.

exalted into a substance, a 'thing in itself,' and the old dualism is accordingly revived.

3. That because the individuality of things constitutes their essence, these are the Absolute, and the individuals characterised,—like the Platonic ideas, only in countless numbers,—must all continue to exist through eternity. It is true that continuity of individual consciousness is only attributed to man, both on account of the higher dignity whereby he enters into communion with the spirits who have intercourse with God, and because of the theological dogma of rewards and punishments.

The truths are:—

1. The *animation* of all things; the recognition of an inner active principle co-operating or rather operating in everything which stirs or moves.

2. The emphasising of *the individual*, as to which we feel and are taught by nature that it constitutes the true essence and differentia of all things, which are ever striving not only after subsistence, but after heightened and developed being. Two prevalent errors were herewith corrected:—

(*a*) That of Spinoza, whose one substance swallowed up all particular existences and made them incomprehensible. This is disproved, as Schopenhauer observes, by the unspeakable sufferings of the world and the ruthlessness of nature.

(*b*) The error that universals, the elements of thought, can ever include or express what is individual. This error flourished down to our own day in the natural sciences, where it was assumed that all so-called natural forces were entities, things in themselves, until the pregnant word was spoken by Robert Mayer, 'Forces are concretes.' Just as Leibniz had said: 'On a raison de réfuter les Cartésiens quand

ils disent que l'âme n'est autre chose que *la pensée*, comme aussi quand ils disent que la matière n'est autre chose que l'étendue. Car l'âme est un sujet, ou *Concretum* qui pense, et la matière est un sujet étendu ou doué d'étendue. L'Ecole a raison de distinguer les *Concrets* et les *Abstraits*, lorsqu'il s'agit d'exactitude [1].'

3. The problem of sensible perception and the inner structure of the organism can only be solved by assuming universal and particular animation, extending throughout the most minute material atoms, i. e. by the *perceptions infiniment petites* of Leibniz. The so-called 'Philosophy of the Unconscious,' which has been proclaimed in our days with oracular pretentiousness and a bombastic waste of crude phraseology, contains a slender kernel of truth, long ago discovered by Leibniz and clearly traced out into all its ramifying consequences. There are innumerable infinitely small perceptions of the body which do not attain the clearness of the intellectual principle which attends principally to the action of the chief organs of sense (the central monad of the rational human mind), and they remain therefore in the obscurity of an apparent unconsciousness. Leibniz correctly uses these dim perceptions to explain not only the vegetative functions of the body, but also the so-called mechanical or instinctive actions of men, i. e. those which have come from habit to be performed unconsciously. It is impossible to close our eyes to the presence of a perceptive element in such acts as walking, dancing, writing, or playing the piano, quite independent of the central consciousness, and indeed only liable to have its accuracy disturbed by having the attention of the latter directed towards it. This idea, which,

[1] Lettre à Remond de Montmort, p. 736, Erdmann.

so far as I am aware, has never received its due consideration, should be associated with the Darwinian doctrine of development as one of the most important principles of explanation.

4. This idea is closely connected with the thought of those continuous, gradual transitions which meet us everywhere in nature, and laugh at the rigid lines of demarcation which men lay down for their own guidance in dealing with isolated kinds or species. Leibniz's two favourite and fundamental axioms are Natura non facit saltus, and Non datur vacuum formarum. All changes are effected upon the infinitely little, and a natural order in which all is organisation supplies material for an infinite multiplicity of living beings. The same gradation obtains in the case of minds as in the material world. There is a great difference between the feeling of animals and the reflection of human thought. 'Il est raisonnable aussi qu'il y ait des substances capables de perception au-dessous de nous, comme il y en a au-dessus, et que notre âme, bien loin d'être la dernière de toutes, se trouve dans un milieu dont on puisse descendre et monter; autrement ce serait un défaut d'ordre[1].' 'I believe, at least,' he says elsewhere, 'that there is this analogy between minds and bodies, that as there is no vacuum in the material world, so the greatest possible multiplicity and variety exists amongst reasonable creatures. There is a complete series or gradation of beings from ourselves downwards, each variety only infinitesimally inferior to the last, until we reach the lowest of natural objects with the least possible measure of organisation[2].' Especially interesting is the passage in a letter to his friend Hermann,

[1] Sur le Principe de Vie, Erdmann, p. 431.

[2] Nouveaux Essais sur l'Entendement Humain, iii. 6. § 12.

in which the subsequent discovery of zoophytes and polypi is forestalled: 'I should marvel less at the discovery of such animal plants, because I am convinced that such things must have an existence in creation. They will perhaps in time be discovered by naturalists, when the infinite hosts of living creatures, that escape ordinary observation by their minute size or their concealment in the recesses of earth and water, come to be investigated. Observation is a thing of yesterday: how then can we deny *a priori* the existence of that which we have as yet had no opportunity of seeing?' Another striking observation refers to the much debated question of *essentiæ reales*, which in fact includes the important problem of the nature of kinds and species, and by which throughout the middle ages philosophers were divided into the two camps of Nominalism and Realism: 'If the essentiæ reales are taken to be only substantial patterns, or types—such as a body and nothing else, an animal without other special qualities, a horse without individual characteristics—one might fairly condemn them as chimæras[1]. And I believe that no one, even of the chief realists, has maintained that there are as many purely generic substances, as there are genera. But this does not prove that the essentiæ reales were mere *signs*. I have often pointed out that there are possibilities of resemblance. . . . One cannot form too vast an image of nature's liberality, it transcends all human thought, and all conceivable possibilities find themselves realised upon her great theatre. There were formerly two axioms in philosophy: that of the Realists made nature a spendthrift, that of the Nominalists a miser. The

[1] That is to say, if reality is attributed to Universals, or to Platonic Ideas as such, as was done by the Realists.

former asserted Nature's horror of a vacuum, the latter that Nature did nothing in vain. Rightly understood both principles are true. Nature is lavish in her effects, and economical in the means or causes which produce them[1].'

One asks oneself involuntarily how it was that Leibniz failed to formulate the Darwinian theory of development, when his sketch of the processes and action of nature was so entirely in harmony with the modern theory of descent, and one might even say based on more profound insight than our short-sighted estimate of 'living' things, and their type, the primæval cell. He starts from the idea that all nature is animated and organised. The only explanation of his having stopped short where he did, seems to be his preoccupation (1) with the religious dogma that the world and all living creatures were *created*, and (2) with the dogma of the Pre-established harmony, derived from the former, and the conviction of the impossibility of union between mind and matter.

After this cursory abridgement of the Leibnizian philosophy we may proceed to consider his important suggestions in isolated fields of thought, and to begin with his contributions to

I. *The theory of intellectual perception.*

1. The first point to notice is his addendum to the Lockian 'Nihil est in intellectu quod non prius fuerit in sensu:' to which Leibniz adds the significant words *nisi intellectus ipse*. We might almost believe this to mean that Leibniz had undertaken to champion the cause of the 'innate ideas,' which Locke had

[1] Nouveaux Essais, iii. 6. § 32. p. 320, Erdmann.

struggled so hard and so successfully to banish from philosophy. The résumé which he gives, in a letter to Bierling, of his criticism on Locke in the Nouveaux Essais would warrant such a view: 'Locke wanders far from the truth in the chief matter, and he has failed to discern the nature of the mind and of truth. If he had rightly weighed the difference between necessary truths and those which we reach to a certain extent by the way of induction, he would have seen that necessary truths can only be demonstrated by principles implanted in the mind, the so-called innate ideas; for the senses teach truly *what* happens, but not what happens necessarily. He has also omitted to consider that the idea of Being, of Substance, of Ideality, of the True and the Good must have been innate in our mind, because *it is itself innate*, and comprehends all these things in itself.'

In reality however Leibniz approaches steadily towards the Kantian doctrine of *a priori* elements in knowledge, as when he shows that mere experience cannot reveal necessary or universal truths, in which there is always something contributed from our own inner nature[1]: 'The senses, though necessary for all our actual knowledge, are not sufficient to have given the necessary or universal truths, since the senses give only instances, that is to say, particular or individual truths. But the examples, which confirm a general truth, do not suffice to establish the universal necessity of this same truth; for it does not follow that what has happened, will always happen in the same way. . . . Whence it appears that necessary truths, such as we find in pure mathematics and especially in arithmetic and geo-

[1] Nouveaux Essais, Avant-propos, Erdmann, p. 195.

metry, must have principles of which the truth does not depend on the examples, nor, therefore, on the evidence of the senses, though without the senses no one would have begun to think of them. This distinction must not be neglected, as was seen by Euclid, who demonstrates by reason what is sufficiently evident by experience and sensible images. Logic, morals, and metaphysics . . . are full of such truths, and their proof can only proceed from internal principles which are called innate. It is true that it is not to be supposed that these eternal laws of reason can be read in the soul, as in an open book, as the praetor's edict may be read in his *album* without trouble or research; but it is sufficient that they can be discovered in us by dint of attention, of which the senses furnish occasions. The success of experiments serves to confirm the conclusions of reason, as in arithmetic a sum is *proved*, to avoid the risk of error in a long calculation.'

In answer to the objection that particular propositions are accepted as indubitable truths by those who have no knowledge of more general maxims, he observes[1]: 'It is true that we begin by perceiving particular truths, as we begin with the coarsest and most composite ideas; but this does not prevent its being a fact, that the order of nature begins with what is simplest, and that the reason of the most particular truths depends upon the more general ones, of which they are only examples. And when any one desires to consider what is in us virtually, and prior to all *apperception*, he is right to begin with what is most simple. For general principles enter into our thoughts, of which they form the soul and the connection. They are

[1] Nouveaux Essais, Avant-propos, Erdmann, p. 211.

as necessary there as muscles and tendons are in walking, though we do not think of them. The mind rests constantly upon these principles, though it is not able easily to disentangle and represent them to itself distinctly and separately, because that requires close attention, and most people, being little accustomed to meditation, have none to give. Have not the Chinese articulated sounds as we have, and yet, having adopted another manner of writing, it has not yet occurred to them to make an alphabet of these sounds. Thus it is we possess many things without knowing it.' The opponents of this view understand by *innate* truths those which would be *instinctively* approved, and these ought not to be confounded . . . 'But what is called the light of nature supposes distinct knowledge, and very often the consideration of the nature of things is nothing else than the knowledge of the nature of our mind and of those innate ideas which have not to be sought for without.' When challenged to produce a proposition of which the ideas are innate, 'I should name the propositions of arithmetic and geometry, and there are no others to be found of necessary truths.' . . . But, if there are innate truths, must there not be innate thoughts? Not at all: 'Car les pensées sont des *actions*, et les connoissances ou les vérités, en tant qu'elles sont en nous, quand même on n'y pense point, sont des habitudes ou des *dispositions*; et nous savons bien des choses auxquelles nous ne pensons guère[1].' 'In a certain sense it may be said that all arithmetic and geometry are innate, since we can realise their truths without any reference to experience, as Plato has shown in a Dialogue, when he introduces Sokrates leading a

[2] Nouveaux Essais, Avant-propos, Erdmann, p. 212.

child to abstruse truths by questions only, without ever teaching him anything. A man might therefore form these sciences in his library, and even with closed eyes, without learning by sight or even by touch the truths he needed; though it is true that these ideas would never be considered at all, if we had not seen and touched things[1].' As to the eternal truths, it should be remembered that they are always at bottom *hypothetical*, and only say, *If* the first is so, then the other is (necessarily) so also.

These passages are sufficient to show that Leibniz did not await the sanction of experience to maintain those truths which the mind derived 'de son propre fonds,' or to point to a source of knowledge which indeed required the stimulus of the senses, but was essentially separate from them. His propositions are laid down apodictically, as necessary, in the confidence that the human reason must originally have something of its own: something which experience and the continual influence of the outer world through the senses may strengthen and develope, and which meanwhile grows into clearer consciousness of itself. Kant's great discovery of the *a priori* possessions of the human reason, which make experience possible, has the ground prepared for it here.

As Kant introduced mathematics as the most powerful ally and the most brilliant confirmation of his doctrine, and assigned to it its proper place in the great classification of human knowledge, so Leibniz proved for the first time, what had been only guessed by the great thinkers of the past, from Pythagoras to Aristotle and from Descartes to Locke, viz. that the peculiar character of mathematical knowledge must furnish the key to the ultimate and most secret

[1] Nouveaux Essais, Avant-propos, Erdmann, p. 208.

conditions of human reason, to its true nature and to its true, natural boundaries.

2. Leibniz laid down as the primary logical principles those of identity, of contradiction, and of the sufficient reason.

'In all demonstrations,' he says, 'I make use of two principles, of which one is that everything is false which involves a contradiction; the second, that every truth, so far as it is not immediate or identical, must always have a *sufficient reason*, that is to say, the idea of the predicate must be expressly or implicitly contained in the idea of the subject; and this holds good of demonstrations referring to things external as well as to internal ones, to contingent as well as necessary truths[1].'

The difference between necessary and contingent truths is very much the same as that between measurable and immeasurable magnitudes. As we can reduce commensurable numbers to a common measure, so a demonstration or reduction to identical propositions takes place in the case of necessary truths. In the case of surd numbers, on the other hand, the solution may be indefinitely approached, but the figures repeat themselves in a circular series without end. In the same way, contingent truths require a progressus in infinitum, an infinitesimal analysis which only God can complete. Hence they are only known with certainty and *a priori* by God. For the reason of the consequence is always to be found in its antecedent, which follows from another antecedent, and so in infinite succession. But this progressus in infinitum is a reason in itself, as this must be found,

[1] At this rate all thought would be an analysis of composite conceptions, which would reach its goal when it had arrived at simple notions. Identical truths are excepted; vide next note.

outside the series, in God, the author of all things, on whom, much more than on their own causal connection, the earlier as well as the later must be assumed to depend. All truths therefore that do not admit of complete analysis, cannot be demonstrated by reasons of their own, but derive their ultimate reason and certainty from the divine spirit, and have not the character of necessity. All these I call truths of fact; and this is the real root of *contingency*, which has not, I believe, been pointed out before[1].'

In this statement the human mind seems to be landing on unknown and undiscovered shores, and a distinction is perceived for the first time between the principles of thought, its inner logical form, and its contents, as originating from elsewhere.

The new truths set forth are—

a. All knowledge of fact has an empirical, contingent side, which can never be referred back to necessity.

b. All certainty rests, in the last resort, upon the proposition of identity; that is to say, reason is only fully satisfied when its operations end with a judgment of identity, and when the different elements under consideration are at last expressed in terms of each other, so that A = A[2].

c. All exclusion and difference rests, on the contrary, on the principle of contradiction; what is A, cannot at the same time be not-A. This propo-

[1] De Scientia Universali, p. 83, Erdmann.

[2] Direct experience, such as that of our own existence, feeling, &c., and *a priori* truths, rest on the proposition of identity, these because subject and predicate agree directly, those because subject and object are the same. Both kinds are therefore independent of demonstration. Nouveaux Essais, iv. cap. 9. § 2.

sition, according to Leibniz, lies at the foundation of all mathematical or necessary truths.

d. The only principle of union between the thought which is on the one hand striving after unity and necessity, and on the other gathering in the manifold and diverse, is afforded by the principle of the sufficient reason, the clearest and most certain possession of the human mind. 'Ce principe est celui du besoin d'une raison suffisante pour *qu'une chose existe, un évènement arrive, qu'une vérité ait lieu.* Est-ce un principe qui ait besoin de preuves[1]?'

The perception is dawning more and more clearly that, what has hitherto been sought in the world, such as unity and multiplicity, cause and effect, really lies at the root of the mental operations themselves, and must be sought out anatomically from the nature of the thinking mind and its primitive conditions. Philosophical investigation tends more and more to withdraw from what is objective and to take the Cartesian anchorage, the Cogito, for the starting-point of rational thought; to see, in fact, more and more clearly that not Ontology, but Dianoiology is the thing required. This is true in regard to the propositions of identity and contradiction as well as to that of the sufficient reason, if we compare them with their doubles, the æternæ veritates, set up by Descartes himself:—

'Ex nihilo nihil fit.'

'Impossibile est idem esse et non esse.'

These predicate *being*, while identity and contradiction refer to the reason itself and its elements, i.e. ideas. Three great thinkers repeat the same ontological proof of the existence of God, but we can

[1] Lettres entre Leibniz et Clarke, p. 778, Erdmann.

still see in their definitions of substance or Deity, as the first and last cause of all being, the progress that has been made from objective being to the source of thought. The reader will feel this by comparing the following three propositions:—

Descartes: 'Per substantiam nihil aliud intelligere possumus quam rem quæ *ita existit*, ut nulla alia re indigeat *ad existendum.*'

Spinoza: 'Per substantiam intelligo id quod in se est et *per se concipitur*, hoc est, id cujus *conceptus* non indiget *conceptu* alterius rei a quo formari debeat' (idea of being).

Leibniz: 'Il faut chercher la raison de l'existence du monde qui est l'assemblage entier des choses contingentes, et il faut la chercher dans la substance qui porte *la raison de son existence avec elle*, et laquelle par conséquent est nécessaire et éternelle' (the reason of being).

Descartes holds fast to the cause, Spinoza separates cause and reason, but allows them to be interchanged; Leibniz alone attains to the conception of the reason or the rational ground.

Leibniz is still far from equalling the depth of the Kantian researches. He still considers the analytic method as the only one proper to human thought; he does not realise that in every judgment, even the most ordinary one, synthesis and *a priori* certainty are involved as well. But the way on which he had entered led surely in the direction where the deepest mysteries of thought lay hid. The way was opened for the distinction between necessary and empirical knowledge; for the first time that which is the mind's, was given to mind, in contradistinction to what belongs to the world or to reality.

But the most important and most pregnant dis-

tinction is that, contained in the principle of the sufficient reason, between *reason* and *cause*. We saw above in the philosophy of Spinoza, how much error and deception followed and could not but follow from the use of these principles as convertible. The principle of causality, upon which all earlier systems built blindly and unconditionally,—which is indeed the sole possession of human reason, and yet broke down whenever it was to be applied to the last problems, so that recourse had to be had to the causa sui, the causa prima, the Deus sive natura,—this principle receives now for the first time philosophic consideration, and becomes itself an object of investigation. The latter indeed was first entered on by Hume, whose doubt as to the reliability of the causal law made him act as the awakener of Kant. But the mere proclamation of this principle, as the primitive property of reason, was a progress not to be exaggerated in the history of philosophic thought, of which the aim, since Descartes, has been to emancipate itself more and more from the external world, and to seek its sources within, where alone they are to be found, since what is given directly, i.e. in consciousness, must be more certain than what is given mediately through the other, viz. matter, or the external world.

The self-deception of reason, in regarding objective existence as the most certain and self-sufficing, takes effect here also. The causal relation presents itself as a process accomplishing itself in the outer world and given thereby, so that at last the mind falls into the fundamental error of empiricism, in which Locke has shared, namely, that reason *learns* the fact of causality from the frequent repetition of successive occurrences. It cannot indeed be ignored that reason itself plays an influential

part in combining and uniting the causal links, since its most important task is to throw light upon the steps of practical conduct to be taken in accordance with the conclusions regarding the future, based upon a knowledge of the causal series of the past. Thus its own proper name, ratio, ragione, raison, reason, is characteristic of the only case of its activity, i.e. the causal relation, which it applies to any fact or act before it. But it is long before it learns to distinguish correctly between cause and reason, and indeed, as we have seen, it continues still inclined to confound the two.

It is only necessary to look closely at the analysis of the idea of cause, as bequeathed by antiquity, and held fast in the Middle Ages, to convince ourselves that the preponderance of the objective element made it impossible to conceive causality under the most important aspect of the rational ground (causa or principium cognoscendi). The classification into efficient causes and final causes (to which 'formal' and 'material' causes may be added) leaves the real ground of reason quite unconsidered, and assumes with naive unconcern (1) that things act causally upon each other, (2) that man can change things in accordance with his intention. In the latter case, that of the final causes, a certain place is indeed allotted to reason, and scholasticism approaches to a real insight: Causa finalis non movet secundum suum esse *reale*, sed secundum suum esse *cognitum*;—but of the causa or the causæ cognoscendi, there is never any mention. This most important point of view was only reached by Descartes, when, starting from the intelligent subject, the root and ground of the knowledge of this subject came to be investigated, and were shown to lie necessarily within,

and not without it. The verification of our reason, as a special gift, necessarily presupposed in all knowledge, led to a more attentive consideration of its operations, and this again could not but result in bringing into view what was everywhere silently assumed, viz. the principle of the sufficient reason.

The Leibnizian principle of the sufficient reason thus for the first time, albeit somewhat tentatively, relegates the principle of causality to the realm of the knowing subject, or to reason. The old proposition, Everything in the world must have a cause, will read now, In virtue of the principle of the sufficient reason no fact will be admitted as true or really existing, no judgment as correct, unless a sufficient reason is forthcoming why it is thus and not otherwise[1].

'Leibniz,' says Schopenhauer[2], 'proclaims this proposition with great solemnity in many passages of his works; and gives himself airs of great importance, as if it was he who had invented it; and yet he has nothing more to say about it than that each and all things must have a sufficient reason—which the world knew already.' This sneer, however, does not hit the mark, for we have not to do with the *invention* of a rational principle, but with the *discovery* of its true place and importance. That man thinks, and is conscious of himself, was known long before Descartes; that everything is perceived in space and time was known long before Kant; and similarly the principle of the sufficient reason has always been made use of in thought, just as we use our bones and muscles in walking. But that it was one of the fundamental

[1] Monadologie, § 32.

[2] Die vierfache Wurzel des Satzes vom zureichenden Grunde, p. 16.

and indeed the most important of rational principles, since the knowledge that one ball forces away another was first derived from it—this was not known before Leibniz, and his great merit is to have put the fact in its proper light.

'Causality is *in us*,' this is the gist of Leibniz's thought. Hume will add, 'Causality is *in us alone*, and ought not to be transferred to the outer world.' 'Causality is in us and is of value and significance only in so far as it is applied to experience and reality,' will be the conclusion of Kant.

3. According to Leibniz there are three kinds of knowledge: (1) *intuitive*, which has *a priori* or innate truths for its object; (2) *demonstrative*, which is reached by the principle of the sufficient reason[1]; (3) *sensible*, which he characterises as an obscure or confused kind of knowledge. For this latter heresy Leibniz is again severely reprimanded by Schopenhauer[2]. 'All abstract knowledge,' he says, 'flows from intuition, and all its value and significance lies only in its relation to intuitive perception. For this reason the natural man always attaches much more value to what is known by direct intuition than to abstract ideas, or what is merely thought; he prefers empirical to logical knowledge. But those who live more among words than deeds, who look more into books and papers than the real world, are of the opposite mind, and in their worst degeneracy turn into pedants and slaves of the letter.

[1] 'La Raison consistant dans l'enchaînement des vérités a droit de lier encore celles que l'expérience lui a fournies pour en tirer des conclusions mixtes: mais la *Raison pure* et nue, distinguée de l'expérience, n'a à faire qu'à des vérités indépendantes des sens.' Discours de la conformité de la foi avec la raison, Erdmann, 479.

[2] Schopenhauer, Welt als Wille und Vorstellung, i. p. 101.

This is the only explanation of how Leibniz, together with Wolf, and all their successors, could go so far astray as, like Duns Scotus, to pronounce intuitive knowledge only a confused form of abstract knowledge. To the honour of Spinoza it must be said, that his juster mind, on the contrary, declared all general ideas to have arisen by the confusion of what was intuitively known.' (Eth. ii. Prop. 40. Schol. 1.)

This criticism too is unjust, and the passage cited from Spinoza refers only to the first and original way in which general ideas were formed, as appears clearly from the scholium immediately following, where he says, in complete agreement with Leibniz, 'Ex his omnibus, clare apparet nos multa percipere et notiones universales formare primo ex singularibus *nobis per sensus mutilate, confuse et sine ordine ad intellectum* repræsentatis.' When Leibniz represents sensible knowledge as confused, he is placing it in opposition to that which Spinoza, in the last-named scholium, calls 'scientia intuitiva, quod cognoscendi genus procedit ab adæquata idea essentiæ formalis quorundam Dei attributorum ad adæquatam cognitionem essentiæ rerum.' The relation of sensible perceptions to the true nature of the things which excite them is conceived in exactly the same way by Leibniz. 'Sensible ideas are dependent on single forms and motions, and express these exactly, although we are unable to recognise the particular elements in the confusion of the infinite number and minute details of mechanical actions. But if we could really behold all the inner constitution of the body (i. e. according to Locke its qualitates primariæ), we should have a clear knowledge of its properties, which might then be traced back to it by intelligible reasons; even though we might never be

in a position actually to perceive them with our senses. A rapidly revolving wheel with long teeth presents a kind of transparency to the view at its periphery; such is confused sensible knowledge, while intellectual intuition, the clear conception of the thing itself, easily distinguishes the teeth[1].'

Schopenhauer's criticism is so far justified that Leibniz does not expressly distinguish between rational and sensible knowledge, but regards both as generically alike, the latter being only a less perfect variety of the former. But notwithstanding all this, an important truth was beginning to dawn at this point upon the mind of Leibniz, namely, that our sensible perceptions, considered objectively, are nothing but unconscious *numeration*. This idea, like the Lockian primary qualities, is only a natural consequence of the doctrines alike of Atoms and of Monads, but Leibniz seems, as was not unnatural, to have first been led to it by his reflections on the nature of music, which consists in rhythmic intervals, or harmonic successions. He describes listening to music as an 'exercitium arithmeticum nescientis se numerare animi,' and says: 'Music delights us, although its beauty consists only in regularity of numbers and in a numeration (of which we are not conscious) of the vibrations of resonant bodies, following each other at regular intervals. The pleasure of sight from proportion is of the same nature, and that of the remaining senses no doubt will be reducible to something similar, though we cannot so easily explain them[2].' If the pleasure which we receive by the senses, the Agreeable and the Beautiful, only rests upon the unconscious numbers of regular rhythm, it necessarily

[1] Nouveaux Essais, p. 358, Erdmann.

[2] Principes de la Nature et de la Grâce, p. 718, Erdmann.

follows that sensations in general can be nothing but a similar unconscious numeration, a view in perfect harmony with that above developed, respecting the infinitely little and therefore unperceived mechanical motions. 'For the nature of the mind consists of perceptions, and as we perceive the body as a whole, but do not perceive the infinitely little parts of which it consists, so the infinitely slight perceptions which are caused by the latter do not attain to the clearness of consciousness[1].' 'When we perceive colours or odours, it is only a perception of infinitely small forms and motions, so that our mind cannot possibly perceive the same distinctly, and so does not observe that its perception is made up of infinitely small perceptions; just as in a mixture of yellow and blue powder, the separate particles are not seen, but the whole appears to us as green, so that we believe we see a new thing (ens)[2].' Natural science, it is well known, has given brilliant confirmation to Leibniz's conjecture, so far as colour is concerned, since the latter has been explained by vibrations of different duration: but as to the two more deeply-rooted senses, taste and smell, the empirical proof has still to be given, and undoubtedly will be given in due time.

The theory of sensible perceptions as unconscious numeration, which was at least first imagined and suggested by Leibniz, is of very great metaphysical significance. Some ultimate and decisive questions naturally attach themselves to it. If the perceptions of sense are the original material of all further knowledge, is this numeration the last point at which we can arrive? Is analytic empiricism therefore, which still consciously grasps the units in their vanishing

[1] Epistola ad Bierling, p. 678, Erdmann.

[2] Meditat. de Cognit. verit. et ideis, p. 81, Erdmann.

minuteness, the last and only goal of the enquiring human mind? Hume will answer in the affirmative.

Kant, on the other hand, will penetrate much further at this very point, and show that, in this very primary and original form of knowledge, in number, or perceptions in time, synthesis and the *a priori* form of time is presupposed, and by it alone experience rendered possible. Thus the ultimate boundary, the ne plus ultra of all knowledge, will be fixed.

II. *Physics.*

1. *The conception of Force.* It is indisputably one of the chief merits of Leibniz to have elucidated this idea and to have laid it down as the fundamental conception for the study of nature. If the student of nature at the present day, in all his experiments and inferences, starts from and returns to this idea, if in all the varying phenomena and manifold magic of the outer world, his endeavour is always to grasp the one natural force and to bring it into subjection to thought and law, this mode of viewing things traces its origin to Leibniz. He founded the dynamic conception of nature, which has since continued to prevail.

Descartes, as we have seen, placed the nature of matter in bare extension, so that formally it became identified with space, and the most curious contradictions ensued. Locke, seeing these contradictions, introduced the idea of *solidity* as the primary quality of matter, to which all other primary qualities were attached. Leibniz, on the other hand, put forward the one correct conception of force, maintaining that it is only in action that being makes itself felt, and reveals its existence: quod non agit, non existit.

'Nothing is purely passive—id quod passivum est, nunquam solum reperitur aut per se subsistit;—anything that was so would be unable even to receive or to retain an impulse of motion from without[1].' 'We only perceive motion, and so far everything happens only in accordance with mechanical laws, but the cause of the motion, the *fons mechanismi*, i.e. the active Force, must always be presupposed, and this is not to be explained mechanically, but metaphysically[2].' 'I was delighted with the fine methods of mathematicians for explaining everything mechanically, and I justly despised the methods of those who explained all things by forms and faculties, from which nothing was to be learnt. But as soon as I sought to understand the principles of mechanics themselves, I saw at once that mere extended magnitude would not suffice to enable me to comprehend the laws of nature shown by experience, but that the conception of *Force* must be invoked, which is very intelligible, although it belongs to the region of metaphysics[3].' 'The most important, hitherto little known or little understood truths are associated with the idea of substance, the true nature of which can only be conceived by starting from the idea of force. This I propose to set forth in a separate work on the science of dynamics. For there is a great difference between active force and the so-called potentia activa or facultas of scholasticism; the latter of which is a mere possibility of acting, if an external influence is brought to bear. But the vis activa is

[1] Epistola ad Hoffmannum, p. 161, Erdmann.

[2] 'Mea semper fuit sententia omnia in corporibus fieri mechanice, etsi non semper distincte explicare possimus singulos mechanismos: ipsa vero principia mechanismi generalia ex altiore fonte profluere.' Ib. p. 161.

[3] Système Nouveau de la Nature, p. 124, Erdmann.

an Entelechy, intermediate between the mere facultas agendi and the actus itself, and needs no further incitement to action than the removal of hindrances in the way. It is thus with the stone hanging by a strained rope, or a bent bow. The ultimate source of all motion is the original force lying in all bodies, which may be limited or restricted in various ways by the conflict or collision of other bodies. This force lies in all substances, and a certain action always arises from it. No bodily substance ever ceases to act, and this has not been sufficiently recognised by those who have supposed its nature to consist of extension and impenetrability only, and have imagined that it was possible for a body to be ever entirely at rest. Thus no created substance can ever receive the *vis agendi* from another, but only conditions and limitations of its own action[1].'

It was through Leibniz that the conception of matter first became clear and serviceable for men of science, after its chief quality had been compared and assimilated with what was best known and most familiar to man, namely his own bodily force, which is the measure of everything else. This step must have shed a degree of light in the days of Leibniz comparable to that thrown in our own days by the discovery that force can only be measured by its effect, and the consequent estimate of natural forces by the *work* done.

It is interesting, and helps to explain the development of the most important conceptions in natural science, to compare the utterances of Descartes and Leibniz on the subject of matter and its nature. We shall see from this more clearly how fluctuating and indefinite the idea continues, so that Descartes at

[1] De Primæ Philosophiæ Emendatione, p. 122, Erdmann.

times speaks the language of Leibniz, while Leibniz continues to hamper himself with the Cartesian definition. Descartes: 'Qui autem dicunt, actionem omnem ab agente auferri posse, recte dicunt, si per actionem motum solum intelligant, non autem si omnem *vim* sub nomine actionis velint comprehendere, ut longitudo, latitudo, profunditas et *vis* recipiendi omnes figuras et motus a materia sive quantitate tolli non possunt.' (Epistolæ, i. 86.) Leibniz: 'Principium activum non tribuitur a me materiæ nudæ sive primæ, quæ mere *passiva* est, et in sola *antitypia* et *extensione* consistit.' (Epist. ad Wagnerum, Erd. 466.)

Here, where we can observe the intermingling of the conceptions of force and extension, where Descartes speaks of the *power* of extension, while Leibniz calls resistance, its antitypy, something purely *passive*, we can see too the difficulty of the birth-struggles of clear ideas, and how everywhere the new is entangled with the old, how it developes with slow but steady growth, and how something of the earlier impression is always carried on into the new. For even Leibniz himself, who first yielded to the conviction that the nature of matter must be sought in force alone, still retained some remnants of the former view. He still separated in thought the traditional conception of matter as the subject, the support of force, as that in which force appears, and thus he ascribed a real—or at least a phenomenal—existence to a mere thing of the mind, materia nuda, or prima. Hence it came to pass that he was obliged to attribute to it certain qualities which he derived from the dominant opinions; in other words, his clear insight was obscured, and much which should have been deduced from the nature of force alone, as extension, impenetrability, resist-

ance, still seemed to him an original property of matter, which in itself was purely passive. Hence contradictory expressions and assertions, such as: 'Matter is that which *resists* penetration; the first matter is therefore purely passive[1];' the vis inertiæ which is defined as '*vis passiva resistendi* et impenetrabilitatem et *aliquid amplius* involvens[2],' and the like.

The fact, however, remains that the idea of Force, which is so exclusively and so effectively made use of in modern physics, because by it alone the two qualities of mutability (the transitional) and permanence can be reconciled without contradiction, had its first origin in the mind of the great Leibniz.

2. *The conservation of force.* With the growing prominence of the idea of force, and the increasing tendency to deduce all changes revealing themselves in matter from it, as a phænomenon bene fundatum, the discovery of the great law of the indestructibility of energy was coming nearer and nearer. The primitive conviction which had always instinctively assumed the presence of something permanent, that law which was first formulated in the materialistic doctrine of Demokritos and Epikuros (ex nihilo nihil fit and nihil fit ad nihilum), was now advancing rapidly towards the clear and definite expression which in our days it has begun to reach, as the last cloudy remnants of the idea of matter were absorbed in the conception of force, or, more accurately, of motion.

The definition above quoted (p. 300), according to which force itself is inseparable from the idea of matter, so that motion is by no means always to be looked on as something communicated, tended to

[1] Epist. ad Bierling, p. 678, Erdmann.

[2] De Ipsa Natura, ib. p. 157.

accelerate the conclusion according to which (apparent) rest is only a restriction of the innate force within the body, which only awaits the removal of these obstacles in order to manifest itself in life.

Leibniz knew very well that this law must exist *a priori;* that it could not possibly proceed from experience, a view which seems not as yet to have dawned upon the majority of our men of science, who lose themselves in such phrases as that Natural science has *proved* the law of the conservation of force! As if anything could be proved by experience, which has to be taken for granted before the slightest experience can be acquired! The universal mechanism of nature is the firm and indispensable base of all natural knowledge, and what is mechanism but the *transmission* of force? Leibniz says, with great point: 'Spinoza (I am not afraid of quoting him when he says what is true) in a letter to Oldenburg makes a similar remark about a work of Sir Robert Boyle, who, to tell the truth, delays too long over a number of fine experiments without drawing from them any other conclusion than that which he might have taken as his premiss, namely, that everything in nature is accomplished mechanically, a principle which can only be proved by reason, and never by experiments, however numerous they may be[1].'

I can only briefly mention the controversy as to the measure of force, which was so long connected with the names of Descartes and Leibniz, dividing the learned world into two camps, and to which Kant himself contributed in one of his youthful works[2]. Descartes said that the measure of force is the quantity of

[1] Nouveaux Essais, iv. 12.

[2] Gedanken von der wahren Schätzung der lebendigen Kräfte, 1747.

motion, *mv*, i.e. mass multiplied by velocity. Leibniz said forces were proportioned as the square of the velocities mv^2. Descartes also maintained that the motion or quantum of movement in the universe always remains the same; while Leibniz asserted, on the contrary, that it was not the quantity of motion but that of *vis viva* which remained the same.

Descartes took the imparted motion as the unit of measurement, and this agrees with his fundamental view, according to which matter is something self-subsisting (extended) to which the determined motion is communicated from without by God[1]. Leibniz, on the contrary, placed the cause of motion in matter itself, of which the true property is just this *force motrice*[2]. He therefore took as the sole standard the most universal manifestation of force, the one which underlies all natural science, gravity, and the free fall of bodies. 'According to my view,' he says, 'forces stand in the proportion of the heights from which the heavy bodies must fall to attain their velocity. But as the force in the universe remains the same and is sufficient to ascend to a corresponding height or produce any other similar effect, it follows thence that the amount of living force in the universe is maintained unimpaired[3].'

[1] Epistol. ii. 25, 'Primo statui esse in tota materia creata certam quantitatem motus quæ neque augeatur neque minuatur unquam; atque ita, quum corpus unum movet aliud, tantundem motus sui ipsius decedere quantum in aliud transfert.' Motion for Descartes is not a real quality, only a mode.

[2] 'Je ne connais point ces masses vaines, inutiles et dans l'inaction dont on parle. *Il y a de l'action partout*, et je l'établis plus que la philosophie reçue: parceque je crois qu'il n'y a point de corps sans mouvement, ni de substance sans effort.' Éclaircissement du Nouveau Système, Erdmann, 132.

[3] Lettre à M. Bayle, Erdmann, p. 193.

I will here only observe that in modern science the Leibnizian standard $\frac{mv^2}{2}$ has been accepted as the base of the principle of the conservation of force in the formula, 'The sum of the *vis viva* and static force in the world remains the same always.' Leibniz has expressed this principle more or less clearly in many passages of his works :—

'The idea of Force is very different from that of motion, the latter of which is more relative. One must measure the force by the quantity of its effects [in modern English, *work*]. There is an *absolute*, a *directing*, and a *respective* force. All maintain themselves in the universe, or in any machine which does not communicate with others; the two latter together compose the first, absolute force. But the same quantity of motion is not maintained, otherwise the perpetuum mobile would be found, and the effect would be greater than its cause[1].'

'Descartes believed that the same quantity of motion was preserved in bodies. It has been shown that he was in error in this; but I have proved that it is true that the same amount of *moving force* is preserved, which is what he confounded with the quantity of motion[2].'

A passage in the correspondence between Leibniz and Clarke is very interesting for its bearing on this subject, as we gather from it, (1) the difficulty which this idea of the conservation of force met with at its birth, since even so clear-headed a man as Clarke could not disabuse himself of the common prejudice as to the genesis of force; (2) how Leibniz, first of all mortals, caught a glimpse of the great truth which

[1] Lettre à M. Arnauld, Erdmann, p. 108.

[2] Éclaircissement du Nouveau Système, p. 132, Erdmann.

ranks among the chief discoveries of Robert Mayer, viz. the conversion of molecular into collective motion, and conversely.

Clarke writes[1]: 'I have shown that the active force in the world naturally suffers constant diminution. It is obvious that this is not a mistake, it is a consequence of the inertness of matter. For this inertness not only causes the diminution of velocity in proportion as the quantity of matter increases (which indeed is no diminution of the quantity of motion), but it also causes solid bodies which are quite hard and un-elastic to *lose all their motion and active force*, if they encounter an equal and opposing force; another cause is therefore needed to impart new motion to them' (i.e. reparation by means of the great Artificer).

Leibniz replies: 'I had maintained that the *vis viva* in this universe continues the same. It is objected that two inelastic bodies if they come into collision will lose some or all of their force. I say, No. It is true that the wholes lose it in relation to their collective movements, but the parts receive this as they are moved internally by the shock. The forces are not destroyed, but distributed amongst the particles. The effect is the same as when one changes large coins into small[2].'

The application of these ideas to heat is found in the Nouveaux Essais[3]: 'With regard to the operation of most natural substances, analogy is the great rule of probability. What cannot be verified can only appear probable in so far as it agrees more or less with established truths. Since the violent friction of two bodies produces heat and even fire,

[1] Erdmann, p. 785. [2] Ib. p. 775.
[3] iv. 16. § 12.

since refractions of transparent bodies cause colours to appear, we judge that fire consists in a violent agitation of imperceptible particles[1],' &c.

I have shown above that Descartes was penetrated with the sense of the unchangeableness and invariability of the mechanical principle in the world of matter; he expresses the great truth that the soul is not in a position to produce or to destroy the least atom of motion. He sought some way of giving a foundation to the universal and positive certainty that by means of and in consequence of our feeling, thought, and will, we can move our limbs in accordance with our conscious purpose: and he found the right way, which makes freedom possible within the bounds of an invariable mechanism; for he saw that given forces, combined by superior intelligence, would be able to make other forces subject to them, by giving them the desired and serviceable direction. This is the true solution of the famous antinomy, which Kant himself maintained to be

[1] Intimations of this idea, which was destined to effect a revolution in the whole theory of nature, are to be met with in antiquity also; the whole doctrine of Herakleitos appears to us to-day as a kind of anticipatory divination of the mechanical theory of heat. Plato is clearly reproducing Herakleitean ideas in the following remarkable passage of the Theætetos (ix. 153):—

'*Sok.* For fire and warmth, which are supposed to be the parent and nurse of all things, are born of friction, which is a kind of motion;—is not that the origin of fire?

'*Theæt.* Yes.

'*Sok.* And the race of animals is generated the same way?

'*Theæt.* Certainly.'

It is also especially interesting that Sokrates-Plato interprets the Homeric golden chain by which all the gods failed to move Zeus, as the sun by whose motion in the heavenly space all life on earth and heaven was preserved, while its arrest would bring the destruction of all things.

soluble, viz. how liberty can subsist in the midst of universal natural necessity. It is true this solution did not agree with Descartes' assumption of two substances, having nothing in common with each other. And it agreed equally little with the Monism of Spinoza, with the una substantia, for it is only possible with individual beings which act upon each other, i.e. with relative forces; it is inapplicable to the All. Spinoza accordingly, consistently with his own assumptions, assumes everywhere the strictest necessity, while Descartes gave expression to the truth which forced itself upon his consciousness, though in doing so he became unfaithful to his own principles; he had recourse to the spiritus animales, an infinitely subtle material which (not indeed without divine assistance) is moved direct from the soul, i.e. is *directed* by its own proper motion, and causes the motion of our members in accordance with the will, i.e. gives them their *direction*.

This inconsistency did not escape Leibniz's penetration, and it was easy to him to vanquish Descartes with his own weapons. He says in a letter to Bernouilli (1696)[1]: 'Not only the same *absolute force*, but also the same *directing force* (vis directiva) or quantity of direction (quantitas directionis ad easdem partes, or quantitas progressus) is preserved in the universe; and this is not measured as the square, but as the simple product of the mass and the velocity. For when two bodies moving from opposite directions meet together, the Cartesian law only says of the quantity of motion that the two motive forces must be *added* together, whereas it is only from the *difference* between the two that the quantity of progress or direction can be ascertained.'

[1] Erdmann, p. 108.

In another passage he says[1]: 'Descartes was perplexed about the bodily changes which follow upon modifications of the soul, because these do not obey his law. He hit accordingly upon a very ingenious invention, and said, one must distinguish between the motion and the direction. The soul is unable to alter the motive force in any way, but it can change the determination or direction of the vital spirits, and it is thus that our arbitrary movements are produced. It is true he was careful not to explain how the soul could change the course of the body, since this is quite as incomprehensible as its imparting motion to the body, since he does not, like me, refer to the pre-established harmony as an explanation. But there is another important natural law, which I have discovered and of which Descartes was not aware, namely, that not only is the same quantity of *vis viva* always preserved, but also the same quantity of direction, in whatever direction we may turn. That is to say, if one draws a straight line and assumes such and so many bodies moving in that direction, we shall find that the quantity of progress on all the lines parallel to this straight line will always remain the same; so that one can calculate the quantum of progress by deducting the force of the bodies tending in the opposite direction from that of the bodies moving in the direction of the line[2]. This law, which is as beautiful and universal

[1] Éclaircissement du Nouveau Système, p. 132, Erdmann.

[2] This permanence of the direction in the universe follows from the principle 'Actio par est reactioni,' which holds good for the Cartesian measure of force (*mv*) of each movement *beginning* in the universe. Newton expresses the principle as follows: 'Actioni contrariam semper et æqualem esse reactionem sive corporum duorum actiones in se mutuo semper æquales esse et in partes contrarias dirigi.' (Princ. Phil. Nat. Math. Axiomata, lex iii.)

as the other, is equally incapable of being violated, and this is the case in my system only, which establishes the conservation of force and of direction.'

If one contemplates the vast multiplicity of motions, the play of vital forces on our own small planet, if one sees on the one hand how winds and waves seem in their motions subject to no law but chance, while, on the other, in the animal world, movements seem to originate by unrestrained arbitrary choice, and both determine themselves in every possible direction,—we shall cease to wonder at the error of which Epikuros furnishes the most striking example in antiquity, the error of supposing that the direction of motion is determined without cause, by mere arbitrary will, and so escapes the sequence of strict mechanical causation. If this were conceivable, men might fly without wings, or birds without a resisting medium, i. e. without air. According to Epikuros, the atoms fall with equal velocity in parallel directions, in absolutely vacant space. In this he has the advantage of Demokritos, whose atoms have different velocities because of their different weights. Whence then is the multiplicity, the vortex of combinations and separations? Epikuros helps himself out of the difficulty—as modern Darwinism with the cell hypothesis—with an apparently small and insignificant *petitio principii*. 'Once, at some undetermined time, certain atoms found themselves induced to take a trifling *lateral motion*[1]!' Lucretius indeed, like Descartes, refers to the arbitrary movements of men and other animals. But Leibniz's keen gaze discerned all this to be so much contraband in the strictly knit system of physical causation.

'Everything in the human body,' he writes, 'down

[1] Lucretius, de Rer. Nat. ii. 251, 293.

to the least detail of its phenomena, happens just as if the false doctrine of Epikuros and Hobbes, which assumes the soul to be a material being, were true; that is, as if man were only a body, an automaton. The view of Descartes concerning animals (that they are only machines) has been transferred to men and attempts made to show that the latter, with all their reason, are only the passive playthings of images and motions. And the endeavour to refute this error only served to prepare a triumph for it, for upon this side it is unanswerable. The Cartesians were almost as unlucky as Epikuros with the declension of atoms, of which Cicero makes such fun, when they tried to make out that though the soul was unable to impart motion to the body, it was able to give it direction. In fact it can do neither the one nor the other, and the materialists need not return to the subject, for there is nothing *external* to man capable of refuting their doctrine[1].'

According to Leibniz there was but one issue from these difficulties and unavoidable contradictions between the direct consciousness and the *a priori* certainty of mathematical and physical axioms; and this was the assumption of his pre-established harmony, which on that very ground seemed to acquire more irrefragable certainty in his eyes. He believed himself to have been the first to solve the eternal opposition between matter and mind. He failed to see that he himself too had given his system a dogmatic base in his divine Creator, that he had made the elephant stand upon the tortoise, while he had no answer to the objection already referred to, addressed to him by Clarke in his last letter (1716, immediately before Leibniz's death): 'On dit qu'il n'est pas

[1] Réplique aux Réflexions de Bayle, Erdmann, p. 185.

possible de concevoir comment une substance immatérielle agit sur la matière. Mais Dieu n'est-il pas une substance immatérielle et n'agit-il pas sur la matière[1] ?'

III. *Metaphysics.*

In answer to his Lockian opponent, who pronounces metaphysics to be mere empty chaffering with words, which experimental knowledge is destined to supersede, Leibniz declares 'that we are now only at the beginning of the foundation of true metaphysics; and we find already many truths founded in reason and confirmed by experience which refer to substances in general. I hope myself to have contributed something to the general knowledge of the soul and of spirits. Such a metaphysic was demanded too by Aristotle; it is the science which he calls ζητουμένη, the Sought, which must stand to the theoretical sciences in the same relation as the science of happiness does to those arts of which it makes use, and as the architect to the masons. Therefore it is, said Aristotle, that the other sciences must depend on metaphysics as the most general, and ought to borrow from her the principles which she has demonstrated[2].'

Leibniz was thus clearly aware of the nature and function of metaphysics; if he failed to penetrate to its source, it was because he looked for this upon the opposite side, starting, not like Kant, from the subject, but, like Aristotle and the Schoolmen, from Being, or Substance. 'Metaphysica agit tum *de ente*, tum *de entis affectionibus;* ut autem corporis naturalis affectiones non sunt corpora, ita entis affectiones

[1] Erdmann, p. 787.

[2] Nouveaux Essais, Erdmann, p. 372.

non sunt entia[1].' The close bearing of the mathematical sciences on metaphysics, due to the former being occupied with the most general relations was clearly established by him. Scholasticism had maintained that number was only an interruption of continuity, and therefore did not apply to immaterial substances. This Leibniz denied, for number is also, as it were, an immaterial figure, formed by the combination of the most various beings. God, angels, man, motion are *four* things. As number is therefore something universal, it certainly belongs to metaphysics. We may thus call metaphysics the doctrine of all that is common to all kinds of Beings.

This was approximately the standpoint of Scholasticism. Leibniz, like Descartes and Spinoza, was of the opinion that all knowledge should be proved mathematically, and so reduced to mathematical certainty. He blames those who measure heaven and earth by this method and do not apply it to the more important knowledge of God, the Soul and the Good. 'Sunt qui mathematicum vigorem extra ipsas scientias quas vulgo mathematicas appellamus, locum habere non putant. Sed illi ignorant, idem esse mathematice scribere quod in forma, ut logici vocant, ratiocinari[2].' Yet Leibniz seems to have understood by this a higher kind of mathematics, to which arithmetic and geometry stand in the relation of parts to a whole, a method of calculation which was to deal with the *analysis of ideas* and from which he hoped great things: 'J'ai insinué ailleurs qu'il y a un calcul plus important que ceux de l'arithmétique et de la géométrie et qui dépend de l'analyse des

[1] De Arte Combinatoria, Erdmann, p. 8.

[2] De Vera Methodo Philosophiæ et Theologiæ, Erdmann, p. 110.

idées. Ce serait une caractéristique universelle dont la formation me paraît une des plus importantes choses qu'on pourrait entreprendre[1].'

In regard to metaphysical conceptions, in the 'Epistola ad Thomasium' (1669) Leibniz still reckoned four kinds of Entities, namely, Mens, Spatium, Materia, and Motus. Space is with him mathematical existence or mere extension, while matter has the further qualities of resistance, occupation of space, and impenetrability[2].

But in his later writings he had reached a much greater depth of metaphysical insight. Thus he says in the 'Réplique aux Réflexions de M. Bayle[3]'

[1] Réplique aux Réflexions de Bayle, p. 191, Erdmann. Leibniz's idea was to introduce a new art, which was to reduce everything to exact mathematical terms and characters—ad expressionem cogitationum per characteres (De Scientia Universali seu Calculo philosophico, p. 83, Erdmann)—as the only method for putting an end to the controversies of the schools and the barren outcry of the sects. All paralogisms would then be shown to be mere errors of calculation, and the disputes of philosophers would be ended by their sitting down to a table and saying: Calculemus. It is true this art, like geometry, is only available in so far as it starts from *data*, but these will be provided for it by all the sciences, medicine, jurisprudence, politics, &c. He promises that, with the help of this novum organum, the range of human knowledge will be as far increased as the range of vision has been by the telescope and microscope. This 'scientia universalis' was thus to accomplish for knowledge in general what geometry and mechanics do for physics. This great plan of a Characteristica universalis, which was associated with the idea of a universal language, was a favourite dream of Leibniz, but it remained only a project. At the present day, when we know the dependence of thought on language and the impossibility of reducing human thoughts by mere analysis to mathematical precision, we can see the impossibility of its execution. The attempt made by Bishop Wilkins (1668) to found a universal language failed, as all others of a similar nature since made have done also.

[2] p. 53, Erdmann. [3] Ib. p. 189.

(1702): 'I admit that time, space, motion and continuity in general, as assumed by mathematicians, are only *ideal* entities, that is to say, they express possibilities, as numbers do. Hobbes has even defined space as a phantasma existentis. But, to speak more precisely, extension is the *order of possible co-existences*, as time is the order of *possible changes*, which, however, are so definitely connected, that these orders refer not only to real but also to possible things, such as may take their place, just as *number* stands in a relation of absolute indifference to the *res numerata*. And although we never meet in nature with such absolutely identical changes as mathematics assume in dealing with motion, or with absolutely regular figures, such as geometry supposes; yet there will be found nothing in nature in the least contrary to the law of continuity or any other exact rule of mathematics; indeed it is only by these rules that all things can become generally intelligible. . . . Although mathematical considerations are only ideal, their application is to things actual, which are permanently subject to these rules.'

In the Nouveaux Essais[1] he gives the same definition of space: 'It is a relation, an order, not only of existing things, but of those which possibly might exist. But its truth and reality are founded on God, like all eternal truths.' Similarly he says of time[2], in reference to Locke's observation that the succession of ideas gives us the conception of time: 'A succession of perceptions rouses in us the idea of duration, but does not create it. Our perceptions never have a sufficiently constant and regular succession to correspond to that of time, which is a uniform and

[1] ii. 13. § 17. p. 240, Erdmann.
[2] Ib. ii. 14. § 16. p. 241, Erdmann.

simple *continuum*, like a straight line. The change in our perception gives *occasion* to think of time, and we measure it by uniform changes; but if there were nothing uniform in nature, time would not therefore cease to be determined, just as space would still be determined though there were no fixed or motionless bodies. It is because we know the rules of multiform motions that we can refer these to uniform, intelligible movements, and so predict what will follow by taking these different movements together[1].' A characteristic instance of the superior insight of Leibniz as compared with the standpoint of Lockian empiricism is furnished by the objection of Philalethes (Locke): 'It is very strange that, as men visibly measure time by the motion of the celestial bodies, they should nevertheless define *time* as the measure of motion[2]' and its refutation.

We see clearly that Leibniz had entered upon the

[1] Newton's definitions approach very closely to those of Leibniz, and point also towards the coming light of Kantian truth. '*Tempus absolutum*, verum et mathematicum in se et natura sua absque relatione ad externum quodvis æquabiliter fluit alioque nomine dicitur Duratio. *Relativum*, apparens et vulgare est sensibilis et externa quævis Durationis per motum mensura (seu accurata seu inæquabilis) qua vulgus vice veri temporis utitur, ut Hora, Dies, Mensis, Annus . . . Accelerari et retardari possunt motus omnes, sed fluxus temporis absoluti mutari nequit.' Philos. Nat. Princ. Math. Defin. viii. Schol. He says similarly of space: 'Absolute space, in itself and without regard to anything external, remains eternally the same and immoveable. Relative space is any moveable dimension or measure of absolute space determined by our senses by the position of bodies.' Nothing need be said of the attack subsequently made upon Newton by Leibniz because the former maintained Space to be the *sensorium* of the Deity, for Newton either used the word metaphorically to signify the Omnipresence of God or attached no very definite idea to it.

[2] Nouveaux Essais, ii. 14. § 22, p. 242, Erdmann.

true metaphysical path at the end of which the great discovery of the ideality of space and time was to be reached. A letter to des Bosses (1709) shows still more clearly the severance of the ideal space from reality. 'Space, like time, is a certain order (i. e. the order of coexistence) which embraces not only the real but also the possible. It is therefore indeterminate, like every *continuum*, the parts of which are thought arbitrarily, not in reality, like the parts of unity or fractions. If there were other subdivisions of real things in the world, there would be other monads, other masses, but space would remain the same. For space is a *continuum*, but an ideal one. The mass is something divided, an actual number, an aggregate of infinite units. But in real things the units exist before the grouping, in ideal ones on the contrary the whole is before the parts. The neglect of this consideration has always led into an endless labyrinth[1].'

'The parts of time and space,' said Leibniz in his correspondence with Clarke[2], 'taken in themselves are ideal things, they are therefore perfectly similar, like two abstract units. But this is not the case with two concrete units, two real periods of time, two real portions of occupied space,—these are actual.'

'I have shown that space is nothing but the *order* of the existence of things, which are considered as existing together. Thus the fiction of a finite, material universe, moving through infinite space cannot be admitted. It is unreasonable and useless, for apart from the fact that there is no real space outside the universe, such an activity would be entirely purposeless, it would work without having anything to do, agendo nihil agere. These are the fancies of

[1] p. 461, Erdmann. [2] p. 766, Erdmann.

philosophers with imperfect conceptions, who make space an absolute reality.'

Leibniz had thus clearly grasped the ideality of space and time; but instead of remaining faithful to this principle and relegating the ideal to its true dwelling-place, in the feeling and thinking subject, he transferred these two forms or categories to the world or substance unconditionally presupposed by himself, and explained space as the order of coexisting things and time as the order of changes in things. But here the question had first to be asked, how such an idea as order in general came into existence, whether it is an original possession of human thought —for it is certainly only an abstract or intellectual idea—or whether the forms of space and time are not rather much the earlier and more primitive and serving rather to make the other conception possible. The same kind of vicious circle, or rather petitio principii, meets us here as in the pseudo-definitions of post-Kantian philosophers, who explain space as the measure of contiguous and time as the measure of successive things,—and then imagine themselves to have told us something,—as if measure, contiguity, and succession were possible without the primary forms of space and time.

Order can only exist for a mind. The principle of the order of things can therefore be sought or found in the thinking mind alone. If Leibniz had familiarised himself with this thought, instead of assuming an order of things imposed from without, he would have remained within the true field of inquiry and would perhaps have forestalled Kant. He would then have enquired what primary possession unites the mind through the senses with a real or outer world, and thence first deduced the order of things *in the mind*.

Clarke was right in objecting that there was nothing about *quantity* in the idea of order. In his last letter he observes[1]: 'The author says now that space is not an order or place, but an order of places, [so that space again is taken for granted]. That does not prevent the same objection from holding good, that the order of places is no quantity. And when he says, time is only the order of successive things, and at the same time maintains that it is the quantity of duration existing between the single successive things, this is obviously contradictory.'

For the rest, in his later works Leibniz clearly shows his insight into the nature of metaphysics and the distinction beween them and mathematics and their respective methods. Thus he says[2]: 'To apply the geometric method to metaphysical objects is praiseworthy, but the attempt has met with little success. Descartes, in spite of his powerful intellect, has never accomplished less than when he made use of it in his answers to objectors. For one gets off more easily in mathematics, because numbers, figures, and calculations are a protection against the errors lurking in words; but in metaphysics, where this aid is wanting, the strictness of the reasoning and the exact definition of ideas should supply the want; but here is to be found neither of these requisites.' 'According to the usual expression, mathematical principles are those which we meet with in pure mathematics, such as numbers, arithmetic, geometry. But metaphysical principles refer to general ideas, such as cause and effect. Especially that great principle belongs here,

[1] Erdmann, p. 785.

[2] Remarques sur la Sixième Lettre Philosophique, p. 684, Erdmann.

that nothing happens without a sufficient reason for its happening thus and not otherwise[1].'

Hume will attach his metaphysical investigations to this highest possession of human thought or reason, and from this point of departure establish his own Skepsis, thus connecting Leibniz and Kant.

If now we review the achievements of the Leibnizian philosophy and its place in the development of philosophic thought, we shall find in it a peculiar agreement with the philosophy of Locke, and at the same time a direct opposition to the same. The agreement lies in the insistence upon the individual. Locke started from the individual thinking being, and asked, How does this being attain knowledge? His theme is 'An enquiry into the *nature* of understanding.' Nature means, like its Greek equivalents, Physis or Genesis, the becoming, and the becoming of knowledge was to enlighten Locke as to its being. His answer ran: All knowledge is derived from *sensation.* Now sensation always presents things manifold, which the human understanding has to arrange in classes. It does so by means of general ideas, which constitute the great distinction of human, as compared with all other knowledge. But instead of examining more closely into this contrast of conceptions and perceptions, Locke contented himself with having pointed it out, dazzled by the discovery that all the material of knowledge is derived from without by means of sensibility, he conceived all knowledge to be as it were a mechanical product, and, like his great predecessor in Empiricism, Bacon, he turned the reflective faculty into an automatic mirror, which, without

[1] Réponse à Mr. Clarke, p. 751, Erdmann.

further inner principles, just *iterat et resonat* at the stimulus of reality. Metaphysical principles lie outside the scope of human knowledge. We learn by experience to know time, space, and infinity. If any one asks What is space? the true answer is: I do not know.

Leibniz too starts from the individual being. While Locke raises sensation or the passive receptive element into a universal principle from which all subsequent knowledge is to be derived, Leibniz on the contrary places the active element in the foreground everywhere. Like Descartes, he is penetrated with the great truth that thought, consciousness, will are We ourselves; all the rest is only indirect knowledge. Instead of the one substantia cogitans of Descartes, he accordingly assumed an infinity of small substances, to which this property of thought essentially belonged. The internal or representative faculty thus constitutes the proper nature of all substances. Kant points out that Leibniz attributed everything exclusively to the conceptions of the understanding and Locke to sensation, whereas these are the two sources of knowledge which have to unite, before we can know anything at all. He shows that the fundamental error of the Leibnizian doctrine was (1) his treating the conceptions of the understanding as the true matter of thought, and sensible intuitions as a similar, only less perfect and confused, kind of knowledge, and (2) his regarding phenomena as things in themselves, which could be comprehended by means of these conceptions. The important remarks on this subject in Kant's *Critik der reinen Vernunft*[1] are as follows:

[1] On the Amphiboly of reflective concepts. Transl. vol. ii. p. 231.

'We only know substances in space through the forces which are active in space, by either drawing others near to it (attraction) or by preventing others from penetrating into it (repulsion and impenetrability). Other properties constituting the concept of a substance appearing in space, and which we call matter, are unknown to us. 'As an object of the pure understanding, on the contrary, every substance must have internal determinations and forces bearing on the internal reality. But what other internal accidents can I think, except those which my own internal sense presents to me, namely, something which is either itself *thought*, or something analogous to it? Hence Leibniz represented all substances, as he conceived them as noumena, even the component parts of matter (after having in thought removed from them everything implying external relation, and therefore composition also), as simple subjects endowed with powers of representation, in one word, as *monads*.'

'Leibniz therefore first assumed things (monads), and within them an internal power of representation, in order afterwards to found thereon their external relation, and the community of their states, that is, their representations. In this way space and time were possible only, the former through the relation of substances, the latter through the connection of their determinations among themselves, as causes and effects. And so it would be indeed, if the pure understanding could be applied immediately to objects, and if space and time were determinations of things by themselves. But if they are sensuous intuitions only, in which we determine all objects merely as phenomena, then it follows that the form of intuition (as a subjective quality of sensibility) comes before all matter (sensations), that space

and time therefore come before all phenomena, and before all data of experience, and render in fact all experience possible. As an intellectual philosopher Leibniz could not endure that this form should come before things and determine their possibility, a criticism quite just when he assumed that we see things as they are [1].'

'He compared all things with each other by means of concepts only, and naturally found no other differences but those by which the understanding distinguishes its pure concepts from each other. . . . In one word, Leibniz *intellectualised* phenomena, just as Locke, according to his system of Noogony (if I may use such an expression), *sensualised* all concepts of the understanding, that is, represented them as nothing but empirical, though abstract, reflective concepts. Instead of regarding the understanding and sensibility as two totally distinct sources of representations, which however can supply objectively valid judgments of things only in conjunction with each other, each of these great men recognised but one of them, which in their opinion applied immediately to things by themselves, while the other did nothing but to produce either disorder or order in the representations of the former [2].'

In these passages the relation of Kant to all preceding philosophy, as well as to these special predecessors, is clearly manifested: the keynote is the elimination of the idea of substance, to which these like all the rest return, after attempted flights, as to the only sure and certain foothold. This contrast alone shows the eagle strength of wing with which Kant's genius was to bear him into the pure heights of idealism, where gravity no longer chains his flight.

[1] Loc. cit. p. 232. [2] Loc. cit. p. 235.

To sum up once more the connection between modern philosophy and these its two great representatives:—

I. The cogito of Descartes determines (1) the subjective (individual), (2) the idealistic starting-point. The material world presents itself as substantia extensa, as one uniform system, while the substantia cogitans is a complete enigma.

II. Materialism and idealism build on the foundation of one or other substance. Subjectivity and individuality threaten to disappear (the spiritual through the atoms, the material by means of ideas); they will be completely absorbed

III. By means of the una substantia, Monism itself.

IV. After the idea of unity, a fruit of the Cartesian idealism, has been sufficiently invigorated by the revision and development of the idea of substance, the rights of the manifold assert themselves again, and individualism revives in a new and more perfect form.

Locke	Leibniz
Founds it upon the renewed cogito, enquires after the origin of ideas, and finds it in the multiplicity of sense-impressions. The understanding is only orderly sensation.	Starts from the multiplicity of substances to which he attributes thought. As they are things in themselves and indestructible, it is the task of reason to distinguish them. Sensation is only imperfect understanding.

The reader will see from the above contrasts how the standpoints are changed in the course of development, how irreconcilable opposites melt into one, and how after the first introduction of idealism by Descartes, its tone and character were borrowed by the most realistic of systems. For there can be no

doubt that Locke, the realist and empiricist, here combines Platonic and Herakleitean ideas, the eternal flux and change of sense-impressions with the duration and permanence of ideas: and yet he is all the while a genuine modern, i.e. idealistic philosopher, and assigns that which Plato and Herakleitos believed themselves to see in the objective world to its true birthplace, the feeling and thinking subject.

Leibniz, on the contrary, the pure idealist, for whom the material world and space were but phenomena, incapable of any interaction with spiritual substances, combines, as he himself says, Demokritos and Aristotle, by spiritualizing the atoms of the former into monads and retaining the formæ substantiales of the latter, which come into existence by means of the monads and their organic power, for every organism has a central monad.

Locke accordingly represents the share of sensation in the genesis of ideas, Leibniz that of the intellectual element, which is present in even the most trifling and meagre perception. This opposition proceeds from the difference of the starting-points, and a higher unity had to be discovered to reconcile the two. Locke represents everything as coming into the understanding from without, Leibniz represents everything as developing from within. Both are obviously right; both see the same object, but from opposite sides.

The errors and narrowness of great men reveal themselves most clearly in their successors and in the schools which found a system on their principles. Locke's empiricism led De Condillac to the *sensation transformée*, to the axiom, *penser c'est sentir*, and the extreme consequences of French materialism, which may be passed by in silence, notwithstanding recent

ephemeral attempts to exalt them as the ripest fruits of modern wisdom,

Non ragioniam' di lor, ma guarda e passa.

The school of Wolff, which for a long time possessed universal popularity on account of its intelligibility, its self-confidence, and its apparent conclusiveness, was thoroughly realistic in character. It was the philosophy of enlightenment, and this was its title to recognition and victory. Reason and its process is the highest type of judgment concerning truth. It has been pointed out often enough that Wolff's philosophy degenerated into a dry and empty formalism, that he was the founder of a new scholasticism, dogmatising unintelligently over the profoundest metaphysical ideas of Leibniz, and illustrating the most trivial matters at length with the whole methodical apparatus of philosophy. The idea of Leibniz, that the reason develops everything out of itself, is established as a principle; then the true possession of the reason, ideas, are taken as the starting-point, and then, by the help of the principle of the sufficient reason, (which is to correspond to the principle of identity), and the principle of contradiction, everything is developed by analysis out of these ideas. There is no question as to the origin or authority of these ideas; they are there, and everything that was in them already is evolved from them at leisure. Things in themselves and ideas are treated as exactly equal, for *nihilum est cui nulla respondet notio*, and *aliquid est cui aliqua respondet notio*, are Wolff's ontological starting-points. As however, in spite of the distinction between *a priori* and *a posteriori* truths, which he inherited from Leibniz, the important distinction between empirical and *a priori* knowledge was not made, his whole philosophy ran

to seed with empty tautologies, circular reasoning, and unfounded dogmatism. The latter fell into three chief divisions, rational psychology, rational cosmology, and rational theology, the great objects of which —God, the world, the soul and its ideas,—were to be demonstrated thence. The dogmatic confidence with which the victorious reason proclaimed its oracles in syllogisms, arguments, axioms, and definitions received a violent shock from the scepticism of Hume, which supplied the arms with which Kant penetrated into the citadel that had so long been held impregnable, and destroyed the whole ingenious fabric by showing that it consisted entirely of the self-created illusions of reason, travelling beyond her proper boundaries.

THE SKEPSIS.

HUME (1711—1776).

'Nasce per quello, a guisa di rampollo,
Appiè del vero il dubbio; ed è natura
Ch' al sommo pinge noi di collo in collo.'

DANTE.

DAVID HUME was one of the most earnest, profound, and honest thinkers who have ever occupied themselves with the great problem of the universe and the human mind. The 'honest doubt,' which gave so much scandal to his contemporaries, was more helpful and productive than thousands of folios filled with the dogmatism that had passed for ages as the highest wisdom, and with the fullest and most confident accounts of God, the world, and the human soul, which reason, operating upon its own manufactured notions, could construct. When it occurred to reason to inquire into the grounds for these notions and to test its own assumptions, the dogmatic tower of Babel fell to pieces, like a house of cards.

It has often been observed that Hume's scepticism instigated Kant's Critique of Pure Reason. Kant himself says[1]: 'I confess frankly, it was the warning voice of David Hume that first, years ago, roused me from dogmatic slumbers, and gave a new direction

[1] Prolegomena, Vorwort.

to my investigations in the field of speculative philosophy. I was far from yielding assent to his conclusions, which came from his not having conceived his task as a whole, but having addressed himself to a single portion, as to which no satisfactory result could be reached without reference to the whole. When one starts from a thought that has been established, but not carried out to all its consequences, by another, one may reasonably hope by continued meditation to carry it a step further than the man to whose genius we owe the first spark of such light.'

Hume's attack was directed against the central point of reason, its true and sole possession—the idea of causation. This idea makes science possible, which, without it, would be a mere aggregate of observations and curious inquiries. 'Even true opinions,' says Plato, 'are of little value when they are not based upon reasons which hold them together in the mind.' And Aristotle says: 'The empiricists know *that* something is, but they do not know the wherefore; theorists on the contrary know the why and the cause[1].' And Schopenhauer calls Why? 'the mother of all the sciences.'

Schopenhauer says of Hume: 'Before this serious thinker no one had doubted that the principle of the sufficient reason, in other words, the law of causality, stood first and foremost in earth and heaven. For it was an "eternal truth," subsisting independently, superior to the gods or destiny: everything else, the understanding which apprehends the principle, as well as the world at large and whatsoever there may be which is the cause of the world, such as atoms, motion, a creator, or the like, exists only

[1] Οἱ μὲν ἔμπειροι τὸ ὅτι μέν ἴσασι, διότι δ' οὐκ ἴσασιν· οἱ δὲ τεχνῖται τὸ διότι καὶ τὴν αἰτίαν γνωρίζουσι. Metaph. i. 1.

in conformity with and in virtue of this. Hume was the first to whom it occurred to ask whence this law of causality derived its authority, and to demand its credentials [1].'

Let us now consider whether the time had come to formulate this question and to disturb reason in its citadel by calling its securest possession in question, and threatening to declare all its knowledge self-delusive.

Locke, in tracing all knowledge to experience, had deduced the causal relation from the same root; he laid down that the effect of the will upon the members of the body and the resistance of bodies to our pressure were the origin of the idea of cause. All knowledge, including this most important, is therefore purely empirical.

Leibniz, on the other hand, accorded its due place in the system of human knowledge to the idea of cause, or rather to the principle of the sufficient reason. He indicated it as one of the most important duties of metaphysics to investigate and explain the primary ideas from which human thought takes its start, and notably this idea of cause. Besides this, Leibniz had established the important distinction between necessary and accidental truths, and had referred the latter, which include all actual matters of fact, to an endless causal series, while the former may be reduced to simple, and in the last resort, to identical propositions.

It was this opposition between empirical or contingent, and necessary or identical truths, that the penetrating glance of Hume decided to be irreconcilable, whence he concluded that causation and experience were incompatible, and that our as-

[1] Vierfache Wurzel des Satzes vom zureichenden Grunde, p. 20.

sumption of things happening necessarily—which still meant their happening *because* of something else —rested accordingly on self-deception.

Here too it is really the eternal contrast between the manifoldness of the world and the craving of our reason after unity which encounters us as we get to the root of the difficulty. Necessity only reveals itself to our thought by the perception of identity, and this therefore, as formal and logical certainty, underlies all the most elementary truths. But whence comes the assumption that this formal logical equivalence corresponds to the world of fact and will find its application there? If sensible and rational knowledge is nothing more than a highly improved method of analysis, then there remains at last nothing but the infinite multiplicity of individual existences, whose co-existence and co-operation can only be explained by a miracle, i.e. the monads and the pre-established harmony. If, on the other hand, reason assumes, with vain self-sufficiency, that its notions correspond exactly to the nature of existing things, it will imagine itself able to explain the latter by merely analysing its own conceptions; and it must soon become apparent that any such reasoning revolves in a never-ending circle.

Empiricism can never lead to unity and necessity, for experience is only of the manifold, whether within ourselves or in the external world. No artifices of reason can convince us that different things are one, i.e. that the different is the same. And nothing less than this is claimed for the idea of cause; it requires us to assume that because A is, therefore B *must* be too. And this is more than rational thought can ever know or admit concerning the self-subsisting things of the outer world.

On the other hand, *a priori* truths furnish no road to the multiplicity and diversity of real things; for all these truths are at bottom merely identical propositions; and what store of knowledge can be derived from identical propositions?

The idea of cause and effect involves fundamentally incompatible assumptions regarding our reason, by applying the formal logical unity to the multiplicity of sense perceptions, and by attributing universality and necessity to things which are by nature single, and accidental or contingent.

Hume was not, as Schopenhauer says, in the passage quoted above, the first to contest the validity of the causal law in the objective world. The sceptics of antiquity had recognised the importance of the question and pointed out some of the inconsistencies involved, and had deduced thence the impossibility of any certain knowledge grounded on necessity. In the old world naturally this was done mainly in the form of *aperçus*, while in modern philosophy, which had found the true starting-point of all knowledge in the thinking subject, this onslaught of Hume's dealt a home thrust.

Among the earlier sceptics Ænesidemus denied the possibility of making the sequence of one thing from another intelligible to the reason, saying that nothing is the cause of anything else, and they who seek after causes delude themselves[1].

The later sceptics gave five reasons which should determine suspense of judgment (ἐποχή).

1. ἀπὸ διαφωνίας, the uncertainty of words; there is no criterium either in sense or thought by which

[1] Μηδὲν μὲν μηδενὸς αἴτιον εἶναι, ἠπατῆσθαι δὲ τοὺς αἰτιολογοῦντας φάσκων. Phot. Bibl. 212; cf. also Sext. Empir. Hyp. Pyrrhon. i. 180.

we can be assured that the same thoughts are attached by different persons to the same word.

2. ἀπὸ τῆς εἰς ἄπειρον ἐκπτώσεως,—the progressus in infinitum,—the fact that every cause has a cause, and this another and yet another ad infinitum.

3. ἀπὸ τοῦ πρός τι, the relativity of all things; we know in what relations a thing stands towards other things, we cannot know what it is in itself πρὸς τὴν φύσιν.

4. ἐξ ὑποθέσεως, because dogmatists always start from something that has been taken for granted.

5. The argument in a circle, when the conclusion sought for is presupposed in the arguments leading to it [1], as, for instance, when one says, man has language because he has reason, while reason is impossible without language.

Other reasons against causality preserved for us by Sextus Empiricus (Adv. Mathem. ix. 207) are interesting, as they agree with those brought forward by Hume, thus giving one more proof of the impossibility of finding any thought that has not been at least partially and accidentally forestalled. 'Cause,' say the sceptics, 'is a relation. The cause of the cutting of meat is a knife; the knife and the meat are real, but the cause is not real, only a πρός τι, a thing of the mind.' There are three conceivable causal relations:—

'1. That contemporary things should cause each other (τὸ ἅμα ὂν τοῦ ἅμα ὄντος). This is perfectly unthinkable, for if two things exist at the same time, one cannot be thought of as originating (γεννητικόν) the other.

'2. That the earlier should cause the latter (τὸ πρότερον τοῦ ὑστέρου ποιητικόν). As long as A stands alone,

[1] Sext. Emp. Pyrrh. Hyp. i. 164.

it is not a cause, for the effect is wanting to complete the relation; as soon as B has appeared, A is no longer there, and the cause is absent.

'3. That the later should be the cause of the earlier is inconceivable both on the ground just alleged, and according to every other principle of sane judgment.

'Moreover a true cause, a *causa agens*, properly so called, must always produce the effect out of itself; it does not require the co-operation of matter or something passive (*τὸ πάσχον*). The dogmatist who assumes cause to be a relation, a *πρός τι*, according tō which the cause may be known by the nature of the passive effect and the effect by the nature of the cause, commits the error of using two words to designate the same thing (*μία ἔννοια δυοῖν δ' ὀνομάτων τεύξεται*)[1]; for how can there be a doing without a suffering, or a suffering without a doing?'

From these acute and, in fact, reasonable arguments, we see two things, viz. the incomplete, naïve objectivism of antiquity, which saw and sought for everything in the external world, in the unquestioned reality of things; and secondly, the scepticism which naturally sprang from the incompleteness of this standpoint, and so led to a presentiment of the ideality of causation, while it was supposed to be relegated to the regions of nothingness. Such considerations can only serve to illustrate the real greatness of Descartes and his work.

[1] The ancients used the illustration of a chariot and its driver, the latter of whom at the same time moves and is moved by the former. And though at the present day we need not be perplexed by this difficulty, there remain other similar ones undisposed of, e. g. in a moving mass what is to be regarded as active or imparting motion, and what as passive or moved?

The significance and force of Hume's scepticism could only be appreciated by an intellectual equal, while others raised the cry of heresy and appealed to 'common sense.' It is amusing to note how most of his adversaries imagined themselves to have demolished Hume, when they had shown how in one chapter (Essay vii) he denies the necessity of the causal sequence, and hence inferred the uncertainty of knowledge, while in the following chapter human freedom is called in question, because everything happens by way of cause and effect. They forgot that a similar inconsistency had lurked for centuries in human thought itself, which assumed at the same time the strict necessity of all cognition, and the unlimited freedom of all action, so that it was a real service to reverse the point of view, as it was obviously fair to do, and so rouse the slumbering reason from its lethargy.

Kant says with great force and justice[1]: 'Since the attempts of Locke and Leibniz, or indeed since the origin of metaphysics, as far back as we can trace its history, there has been no incident so decisive of the possible fate of the whole science as the onslaught of David Hume. He brought no new light to this branch of knowledge, but he kindled a spark whence light might have been derived, if it had fallen upon fitting tinder.'

'Hume took his start principally from a single but important metaphysical conception, namely that of the connection of cause and effect (together with the consequent conception of force and action); and he summoned the reason, which professed to be its author, to give an answer for herself and declare by

[1] Prolegomena, Vorwort.

what right she supposes that anything of such a nature can exist, that whenever it exists, *something else* necessarily exists forthwith; for this is what the conception of cause involves. He proved conclusively that it was impossible for the reason to construct *a priori* such a connection which involves necessity; for it is impossible to see how because one thing is, another thing should necessarily also be, or how the conception of such a connection should have been introduced *a priori*. He concluded from this that the reason was entirely deceived as to this idea, was in error in regarding it as its own offspring, seeing that it was really a bastard child born of the imagination and experience. From this alliance sprang certain ideas which were brought under the law of association, and the subjective necessity arising thence, i.e. habit, is treated as the observed objective necessity. From this he inferred that the reason possessed no power of thinking such connections, even in a general form, because its conceptions would then be pure fictions, and that all its vainly subsisting *a priori* knowledge was nothing but common experience under a false brand, which is much the same as saying there neither is nor can be such a thing as metaphysic [1].'

[1] 'Hume himself, however, gave the name of metaphysic to this destructive philosophy, and attached a great value to it. 'Metaphysic and morals,' he says, 'are the most important branches of knowledge; mathematics and natural philosophy are not half so valuable.' With all his acuteness, Hume in this looked only at the positive help to be derived from moderating the exaggerated claims of speculative reason, so as to do away with the endless, intolerant disputes which perplex the human race; he lost sight of the positive injury arising when the most important truths are taken out of the hand of the reason, which has nothing left to propose to the will as the highest goal of its efforts.' Kant's note.

'However premature and incorrect his conclusion may have been, it was at least based upon investigations which deserved the co-operation of the ablest minds of his generation in the attempt to solve the problem in the sense he indicated, an attempt which must have resulted in a complete intellectual reform.

'But unfortunately the malevolent fate which seems to watch over metaphysics had decreed that no one should be able to understand him. One cannot observe without a certain degree of pain how all his opponents—Reid, Oswald, Beattie, and even Priestley, —all without exception miss the point of his contention by taking for granted the very thing which he is calling in question, at the same time that they demonstrate with great violence and hardihood points which it had never occurred to him to doubt, and so misunderstood his invitation to improvement that everything remained just as it was before. The question was not whether the conception of cause was just, serviceable, and indispensable in relation to all natural sciences, for this had never been disputed by Hume; but whether it could be conceived *a priori* by the reason, and thus possessed an internal truth independent of experience which would make it admit of more extended application, not limited to matters of experience. This was the point as to which Hume demanded information. The question was only as to the origin of the conception, not as to its practical indispensableness; if only the former point were cleared up, the conditions and limitations of its validity would follow of themselves.

'His opponents, to deal satisfactorily with their task, would have had to penetrate deeply into the nature of reason, in so far as it is occupied with

pure thought, and this they found inconvenient; it was easier to assume a defiant bearing and simply refer the matter to 'common sense.' Sound, or as it is sometimes called, plain common sense, is in fact a very rare and precious gift of heaven. But its possession must be proved by deeds, by deliberation and reasonableness in thought and speech, not by appealing to it as an oracle, when the speaker has nothing else sensible to allege.

'To appeal to human common sense just when—and not before—knowledge and insight begin to fail, is one of the most ingenious inventions of our age, and one which enables any shallow babbler to hold his own against thinkers of depth and thoroughness. So long, however, as any fragment of insight remains, this expedient need not be resorted to; and looked at in the right light, such an appeal is simply a reference to the judgment of the masses, a kind of sanction which makes philosophers blush, while popular witlings boast of it triumphantly. I should have thought that the claims of Hume to a healthy common sense were as strong as those of Beattie, while he certainly possessed, what the other as certainly did not, the critical reason by which common sense is held in check, and not allowed to lose itself in speculations or to seek to decide upon questions involving principles which it is unable to verify; for in this way only can it continue to deserve the name it claims. Chisel and mallet may suffice for a job of carpentry, but the engraver requires a needle for his art. Thus both common sense and speculative intelligence are useful in their way, the former when we have to do with judgments with a direct practical application, the latter when general conclusions have to be deduced from abstract conceptions, as, for instance, in

metaphysics, where the self-styled (sometimes by antiphrasis) common sense has no jurisdiction at all.'

Notwithstanding this crushing attack upon the opponents of Hume, there still seem to be some writers who do not understand what is the issue involved. This appears from the irrelevant remarks with which Mr. Lewes, in his Problems of Life and Mind (ii. pp. 408–412), aims at controverting Hume, which should serve as a warning to all those who occupy themselves with philosophy, without having first penetrated into the spirit of Kant's writings, and having learnt from them what must be accepted as the foundation and starting-point of all true philosophy in the future. To neglect Kant is the same thing as to amuse oneself after Lavoisier with experiments in alchemy, or after Bopp with the ancient etymological trifling based on casual resemblances of sound.

I will now proceed to reproduce in brief outline the simple and yet convincing course of Hume's arguments.

'Surely,' he says, 'if there be any relation among objects, which it imports to us to know perfectly, it is that of cause and effect. On this are founded all our reasonings concerning matter of fact or existence. By means of it alone we attain any assurance concerning objects which are removed from the present testimony of our memory and senses. The only immediate utility of all sciences is to teach us how to control and regulate future events by their causes. Our thoughts and enquiries are therefore, every moment, employed about this relation; yet so imperfect are the ideas which we form concerning it, that it is impossible to give any just definition of

cause except what is drawn from something extraneous and foreign to it[1].'

Most writers on the subject either 'employ unintelligible terms or such as are synonymous to the term which they endeavour to define. Thus, if a cause be defined *that which produces anything*, it is easy to observe, that producing is synonymous to *causing*. In like manner, if a cause be defined *that by which anything exists*, this is liable to the same objection. For what is meant by these words *by which*? Had it been said that a cause is *that* after which *anything constantly exists*, we should have understood the terms. For . . . this constancy forms the very essence of necessity, nor have we any other idea of it[2].'

We get here at the root of the whole enquiry. Our inner consciousness tells us that we are not satisfied with mere succession in time as an account of the idea of cause. The question accordingly arises whether in the above definition we may substitute the word *necessarily* for constantly. Hume denies this positively, and from the empirical standpoint occupied by himself and Locke, no other answer was possible.

If everything is derived from experience, the idea of cause must be so derived also. If there were nothing but change and uncertainty in nature, the idea of causality would never have arisen. But instead of this we do actually observe a certain uniformity in the sequences of events. We do not find any power or necessary connection binding the effect to the cause, we only find that the one does in fact follow the other. Hence it is that men 'acquire by long

[1] Enquiry Concerning Human Understanding, sect. vii. pt. 2.
[2] Ib. sect. viii. 1.

habit such a turn of mind, that upon the appearance of the cause they immediately expect with assurance its usual attendant, and hardly conceive it possible that any other event could result from it.

'But were the power or energy of any cause discoverable by the mind, we could foresee the effect even without experience, and might at first pronounce with certainty concerning it, by the mere dint of thought and reasoning. In reality, there is no part of matter that does ever, by its sensible qualities, discover any power or energy, or give us ground to imagine that it could produce anything, or be followed by any other object, which we could denominate its effect. . . . The scenes of the universe are continually shifting, and one object follows another in an uninterrupted succession; but the power or force which actuates the whole machine is entirely concealed from us, and never discovers itself in any of the sensible qualities of body.

'We have no idea of this connexion, nor even any distinct notion what it is we desire to know, when we endeavour at a conception of it. We say, for instance, that the vibration of this string is the cause of this particular sound. But what do we mean by that affirmation? We either mean *that this vibration is followed by this sound, and that all similar vibrations have been followed by similar sounds;* or, *that this vibration is followed by this sound, and that upon the appearance of one the mind anticipates the senses, and forms immediately an idea of the other.* We may consider the relation of cause and effect in either of these two lights, but beyond these we have no idea of it.

'But there still remains one method of avoiding this conclusion. . . . When any natural object or event

is presented, it is impossible for us, by any sagacity or penetration, to discover or even conjecture, without experience, what event will result from it, or to carry our foresight beyond that object which is immediately present to the memory and senses. Even after one instance or experiment, where we have observed a particular event to follow upon another, we are not entitled to form a general rule or foretell what will happen in like cases, it being justly esteemed an unpardonable temerity to judge of the whole course of nature from one single experiment, however accurate or certain. But when one particular species of event has always, in all instances, been conjoined with another, we make no longer any scruple of foretelling one upon the appearance of the other, and of employing that reasoning which can alone assure us of any matter of fact or existence. We then call the one object, *Cause*; the other, *Effect*. We suppose that there is some connexion between them; some power in the one by which it infallibly produces the other, and operates with the greatest certainty and strongest necessity.

'Shall we then assert that we are conscious of a power or energy in our own minds, when, by an act or command of our will, we raise up a new idea, fix the mind to the contemplation of it, turn it on all sides, and at last dismiss it for some other idea, when we think that we have surveyed it with sufficient accuracy? ... But do we pretend to be acquainted with the nature of the human soul and the nature of an idea, or the aptitude of the one to produce the other? This is a real creation, a production of something out of nothing[1]; which implies a power so

[1] And therefore the realization of the idea of cause; cf. ante, the view of the Greek sceptics.

great that it may seem at first sight beyond the reach of any being less than infinite. At least it must be owned that such a power is not felt, nor known, nor even conceivable by the mind. We only feel the event, namely the existence of an idea consequent to a command of the will; but the manner in which this operation is performed, the power by which it is produced, is entirely beyond our comprehension.

'The command of the mind over itself is limited, as well as its command over the body.' The latter (which Locke had brought forward as the prototype of the idea of Cause) eludes our discernment as much as all the rest. 'The influence of volition over the organs of the body is a fact. . . . But the means by which this is effected, the energy by which the will performs so extraordinary an operation, of this we are so far from being immediately conscious, that it must for ever escape our most diligent enquiry. . . . Is there any principle in all nature more mysterious than the union of soul with body, by which a supposed spiritual substance acquires such an influence over a material one, that the most refined thought is able to actuate the grossest matter? Were we empowered by a secret wish to remove mountains or control the planets in their orbits, this extensive authority would not be more extraordinary nor more beyond our comprehension. . . . The immediate object of power in voluntary motion is not the member itself which is moved, but certain muscles and nerves and animal spirits, and perhaps something still more minute and unknown, through which the motion is successively propagated. . . . That the motion of the limbs follows the command of the will is a matter of common experience like other natural

events.' And as the vulgar do in the case of what is apparently miraculous, so philosophers think themselves obliged in all cases to have resort to some invisible intelligent principle as the immediate cause of what is unexplained. 'Our authority over our sentiments and passions is much weaker than that over our ideas; and even the latter authority is circumscribed within very narrow boundaries. Will any one pretend to assign the ultimate reason of these boundaries, or show why the power is deficient in one case and not in another? This self-command too is very different at different times. A man in health possesses more of it than one languishing with sickness. We are more master of our thoughts in the morning than in the evening; fasting than after a full meal. Can we give any reason for these variations except experience?' In short, the will by itself has no knowledge of its own powers or their source. 'It requires as certain experience as that of which we are possessed to convince us that such extraordinary effects do ever result from a simple act of volition.'

To sum up the argument in his own words: 'Every idea is copied from some preceding impression or sentiment; and when we cannot find any impression we may be certain that there is no idea. In all single instances of the operation of bodies or minds, there is nothing that produces any impression nor consequently can suggest any idea of power or necessary connexion. But when uniform instances appear, and the same object is always followed by the same event, we then begin to entertain the notion of cause or connexion. We then *feel* a new sentiment or impression, to wit, a customary connexion in the thought or imagination between

one object and its usual attendant; and this sentiment is the original of that idea which we seek for.'

But the regularity of the course of nature up to a certain point supplies no *logical* ground for the expectation that the regularity must continue. Experience can tell us nothing of the inner nature of bodies, which might change without any change in their sensible qualities. It is useless to say that my own conduct invalidates the doubt; as a practical agent I may have no such difficulties, but as a philosopher I am justified in expressing the doubt, though I may have little hope of seeing it removed. 'It is certain that the most ignorant and stupid peasants, nay infants, nay, even brute beasts, improve by experience, and learn the qualities of natural objects by observing the effects which result from them.' When a child has felt the sensation of pain from touching the flame of a candle, he will be careful not to put his hand near any candle; but will expect a similar effect from a cause, which is similar in its sensible qualities and appearance. If you assert therefore that the understanding of the child is led into this conclusion by any process of argument and ratiocination, I may justly require you to produce that argument, nor have you any pretence to refuse so equitable a demand. You cannot say that the argument is abstruse and may possibly escape your enquiry, since you confess that it is obvious to the capacity of a mere infant[1].'

But there is a connection of cause and effect met with in the animal world and ministering to the preservation of the organism, which is not based upon practice or experience: 'These we denominate

[1] Enquiry Concerning Human Understanding, sect. iv.

instincts, and are so apt to admire as something very extraordinary and inexplicable by all the disquisitions of human understanding. But our wonder will, perhaps, cease or diminish when we consider that the experimental reasoning itself, which we possess in common with beasts and on which the whole conduct of life depends, is nothing but a species of instinct or mechanical power that acts in us unknown to ourselves, and in its chief operations is not directed by any such relation or comparison of ideas as are the proper objects of our intellectual faculties. Though the instinct be different, yet still it is an instinct, which teaches a man to avoid the fire as much as that which teaches a bird with such exactness the art of incubation, and the whole economy and order of its nursery[1].'

Both our practical and our speculative anticipations of natural events thus display 'a kind of pre-established harmony between the course of nature and the succession of our ideas; and though the powers and forces by which the former is governed be wholly unknown to us, yet our thoughts and conceptions have still, we find, gone on in the same train with the other works of nature. *Custom* is that principle by which this correspondence has been effected, so necessary to the subsistence of our species and the regulation of our conduct in every circumstance and occurrence of human life. Had not the presence of an object instantly excited the idea of these objects commonly conjoined with it, all our knowledge must have been limited to the narrow sphere of our memory and senses; and we should never have been able to adjust means to ends, or employ our natural powers either to the producing

[1] Enquiry Concerning Human Understanding, sect. ix.

of good or avoiding of evil . . . This operation of the mind, by which we infer like effects from like causes, and *vice versa*, is so essential to the subsistence of all human creatures, it is not probable that it could be trusted to the fallacious deductions of our reason, which is slow in its operations; appears not, in any degree, during the first years of infancy; and at best is, in every age and period of human life, extremely liable to error and mistake. It is more conformable to the ordinary wisdom of nature to secure so necessary an act of the mind by some instinct or mechanical tendency, which may be infallible in its operations, may discover itself at the first appearance of life and thought, and may be independent of all the laboured deductions of the understanding. As nature has taught us the use of our limbs, without giving us the knowledge of the muscles and nerves by which they are actuated, so has she implanted in us an instinct which carries forward the thought in a correspondent course to that which she has established among external objects, though we are ignorant of those powers and forces on which this regular course and succession of objects totally depends[1].'

Hume had thus reached the same result as the Greek sceptics, that the purpose of knowledge was the preservation of human existence, and that it should therefore never venture beyond its proper boundaries and presume to fathom the eternal truths of metaphysics, among which the investigation of causes was to be reckoned, as this idea, in and by itself, is simply incomprehensible to man, besides being never realised in fact. The true business of

[1] Enquiry Concerning Human Understanding, sect. v.

man is to reproduce in thought the sequences given by experience in a corresponding order, and not to meddle with the tedious methods of logical inferences or deduction. The Greek sceptics had substantially the same meaning when they contested the *signum demonstrativum* and accepted and extolled the *signum memoriale*. In the latter, according to them, the whole force of human knowledge was to be found, and beyond this it cannot go; smoke brings fire, wounds death *into remembrance*. The mistake of the dogmatists is to see, in all these things, signs, which are to enable them to pierce into the impenetrable nature of things. The germ of Hume's theory is thus contained in this fundamental view of theirs. But it is very interesting that the Greek sceptics should have been right in placing the seat of human superiority over brutes in these *signa memorialia*, and thus, perhaps, for the first time, virtually indicating the importance of language to thought[1].

Human thought could reach no other than these negative results, from the starting-point of mere empiricism. If, as Locke assumed, the idea of cause, as well as everything else, was derived from without, then this idea itself is contingent, not necessary, and is therefore self-destructive. The scepticism of Hume in fact determined the disintegration of empiricism, and so prepared the way for profounder knowledge.

We must now follow him into these realms of

[1] Κἂν δῶμεν δὲ διαφέρειν τῶν ἄλλων ζῴων τὸν ἄνθρωπον, λόγῳ τε καὶ μεταβατικῇ φαντασίᾳ καὶ ἐν τῇ ἀκολουθίᾳ, ἀλλ' οὗτοι γε καὶ ἐν τοῖς ἀδήλοις καὶ ἀνεπικρίτως διαπεφωνημένοις συγχωρήσομεν αὐτὸν εἶναι τοιοῦτον, ἐν δὲ τοῖς φαινομένοις τηρητικήν τινα ἔχειν ἀκολουθίαν, καθ' ἣν μνημονεύων τινα μετὰ τίνων τεθεώρηται, καὶ τίνα πρὸ τίνων, καὶ τίνα μετὰ τίνα, ἐκ τῆς τῶν προτέρων ὑποπτώσεως ἀνανεοῦται τὰ λοιπά. Sext. Empir. Adv. Math. viii. 288.

higher knowledge which lie outside experience, and deal therefore with *a priori* truths, with speculative and metaphysical knowledge claiming to impart dogmatic instruction concerning the nature of things.

Hume has rendered some services to the doctrine of knowledge, in pursuing the path opened by Locke, and further developing the relation of sensible perceptions to the formation of ideas. Locke called the ordinary affections of sense, as well as the inner movements of the feelings, i. e. the passions, by the name of ideas. Hume saw what was erroneous in this view, and distinguished between impressions of sense,—the expression is his own,—and the thoughts which are formed thence. He had thus taken a step which might have led him far in advance if he had followed the admirable advice of Locke, to investigate the origin of ideas. But instead of doing this, he assumed, as appears from the foregoing passage, a mysterious incomprehensible mechanism within the soul, which produces ideas, as our body moves by its nerves and muscles. Everything supplied food for his scepticism.

'All the objects of human reason or enquiry may naturally be divided into two kinds, to wit, *Relations of Ideas*, and *Matters of Fact*. Of the first kind are the sciences of Geometry, Algebra, and Arithmetic. . . Propositions of this kind are discoverable by the mere operation of thought, without dependence on what is anywhere existent in the universe. Though there never were a circle or triangle in nature, the truths demonstrated by Euclid, would for ever retain their certainty and evidence.

'Matters of fact are not ascertained in the same manner, nor is our evidence of their truth, however great, of a like nature with the foregoing. The con-

trary of every matter of fact is still possible; because it can never imply a contradiction . . . *That the sun will not rise to-morrow* is no less intelligible a proposition, and implies no more contradiction, than the affirmation that it will rise[1];' there is no logical necessity affecting matters of fact.

If we turn to abstract and *a priori* knowledge, we find ourselves entangled in so many contradictions that we are in danger of falling into scepticism. Ask a mathematician what he means when he pronounces two quantities to be equal, and he will appeal from reasoning to intuition. The principles deduced from the ideas of space and time seem full of absurdity and contradictions. 'No priestly *dogmas*, invented on purpose to tame and subdue the rebellious reason of mankind, ever shocked common sense more than the doctrine of the infinite divisibility of extension with its consequences, as they are pompously displayed by all geometricians and metaphysicians with a kind of triumph and exaltation.'

All men and even animals take for granted the reality of the external world and regulate their acts and wishes upon the assumption. Yet philosophy furnishes the most unquestionable proof that all this imaginary external reality is and can be nothing more than modification of our consciousness, i. e. forms of sensibility. And the Cartesian appeal to the veracity of the Deity to prove the veracity of our senses is of little avail, seeing that we are certainly in many cases deceived by our senses. Indeed, 'it is universally allowed by modern enquirers, that all the sensible qualities of objects, such as hard, soft, hot, cold, white, black, etc., are merely secondary, and exist not in the objects themselves, but are perceptions of the mind,

[1] Enquiry Concerning Human Understanding, sect. iv.

without any external archetype or model, which they represent. If this be allowed, with regard to secondary qualities, it must also follow, with regard to the supposed primary qualities of extension and solidity; nor can the latter be any more entitled to that denomination than the former. The idea of extension is entirely acquired from the senses of sight and feeling . . . an extension that is neither tangible nor visible cannot possibly be conceived,' so the assertion that the ideas of these primary qualities are attained by *abstraction* is unintelligible, and even absurd.

The best course is to acquiesce in 'the limitation of our enquiries to such subjects as are best adapted to the narrow capacity of human understanding. . . While we cannot give a satisfactory reason why we believe, after a thousand experiments, that a stone will fall, or fire burn, can we ever satisfy ourselves concerning any determination which we may form, with regard to the origin of worlds, and the situation of nature, from, and to eternity?'

By keeping within narrow and reasonable limits we shall find what are the proper subjects of science and enquiry. 'The only objects of the abstract sciences or of demonstration are quantity and number, and all attempts to extend this more perfect species of knowledge beyond these bounds are mere sophistry and illusion. As the component parts of quantity and number are entirely similar, their relation becomes intricate and involved; and nothing can be more curious, as well as useful, than to trace, by a variety of mediums, their equality or inequality, through their different appearances. But as all other ideas are clearly distinct and different from each other, we can never advance further, by our utmost scrutiny, than to observe this diversity, and, by an obvious reflection,

pronounce one thing not to be another. . . All those pretended syllogistical reasonings, which may be found in every other branch of learning, except the sciences of quantity and number, are indeed nothing but imperfect definitions, and those sciences may safely, I think, be pronounced the only proper objects of knowledge and demonstration.

'All other enquiries of men regard only matter of fact and existence; and these are evidently incapable of demonstration. Whatever *is* may *not be*. No negation of a fact can involve a contradiction . . . it is only experience, which teaches us the nature and bounds of cause and effect. . . When we run over libraries, persuaded of these principles, what havoc must we make? If we take in our hand any volume, of divinity or school metaphysics, for instance, let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames; for it can contain nothing but sophistry and illusion[1].'

The conclusion leaves nothing to be desired in point of clearness.

1. On the one hand we have mathematics, intellectual processes in the realm of the *a priori*, whereby truth is developed, step by step, sometimes in a highly complicated manner. The matter of reasoning is only the relation of ideas referring to quantity and number. We are reminded of Hobbes' saying that all thought is addition and subtraction.

2. On the other hand, the empirical sciences, where all syllogistic procedure, all the refinements and artifices of subtle thought are out of place: for it is

[1] Enquiry Concerning Human Understanding, sect. xii.

not, reason, but experience alone that can teach us anything about causes and effects. Who could have discovered *a priori* the explosive power of gunpowder, the direction of the magnetic needle, and the like? Even in the case of complicated mechanism, experience alone can enlighten us. Who would ever attempt to derive from first principles the fact that milk and bread are proper nourishment for a man, and not for a lion or tiger?

We may regard the empirical enthusiasm which breathes in all Hume's writings, as the last outbreak of a concentrated animosity against the scholastic method, which imagined that it had established a claim to the explanation of reality, when it had simply first separated and then recombined its own forms of thought in various shapes. The example of such eminent thinkers as Descartes, Spinoza, and Leibniz, shows that in theological and philosophical writings this method still largely prevailed, notwithstanding the light already won. They all sought to bridge the interval between thought and fact with the *ens maxime necessarium*, which was also the *ens realissimum*. Hume's fundamental idea and profound conviction is, on the contrary, that no *ens reale* is *necessarium*, let alone *maxime necessarium*, except indeed for those who are entangled in the circular revolutions of the syllogism, and in all their labour fail to light upon any road to reality, since they cannot see or value its one true source—experience.

We have already spoken, *apropos* of Spinoza's Ethics, of the perverse attempt to apply mathematical methods to other conceptions. One example taken from Wolff's works may suffice to show what a fruitless and unintelligent use is made of it in the writings of ordinary mediocre men. In the 'Anfangsgründe

der Baukunst' we find the proposition: A window must be wide enough for two persons to lie comfortably in it. Demonstration. People frequently wish to lie in a window with one other person to look out of it and as (§ 1) the architect ought in all things to consult the wishes of the landlord, he ought to make the windows wide enough for two persons to lie comfortably side by side in it. Q. E. D.[1]

Kant's relation to Hume is clearly indicated in the passage quoted above from the Prolegomena, and the same passage shows plainly wherein the great philosopher conceived the gist of Hume's scepticism, which he characterises as incontrovertible, to consist.

Since the acceptance of the Cartesian *cogito* as the starting-point of philosophy, the chief preoccupation both of its author and all his successors has been to

[1] This kind of professorial philosophy, which lay like an incubus on humanity, was in Goethe's mind, when he made Mephistopheles describe the nature of logic in the well-known verses which tell how to what seemed so simple as eating and drinking, 'One, two, three' was necessary. Schiller laughs at the same philosophy, when he writes:—

'Doch wer Metaphysik studirt,
Der weiss dass wer verbrennt, nicht friert,
Und dass das Helle leuchtet,
Und dass das Nasse feuchtet.'

Lichtenberg's persiflage supplies an excellent pendant—it can hardly be called a parody—to the above passage of Wolff: 'When a house is on fire, the first thing to be done is to cover the right side of the house on the left hand, and the left side of the house on the right hand. Demonstration: For supposing on the contrary one were first to cover the right side of the right-hand house and the left side of the left-hand house, the right side of the left-hand house and the left side of the right-hand house are nearer to the flames than the left side of the left-hand house and the right side of the right-hand house. If, then, one were to cover the latter rather than the former, one would be protecting what is further from the flames sooner than what is nearest them, which is manifestly contrary to reason.' Ergo &c., Q. E. D.

discover some explanation or excuse for the assumption of a real external world, when everything is only thought, ideal, a mode or modes of consciousness.

The only thinkers who have affected a real reconciliation of the two opposites, Spinoza and Leibniz, go beyond the Cartesian standpoint and construct a world, it is true in strict accordance with the rules and method of Cartesian idealism, but dogmatically, without further proof or foundation.

The rest throw themselves resolutely upon one or other opposite, either ignoring or peremptorily denying the existence of the other. The most consistent of all, is Bishop Berkeley, whose idealism may stagger us, but is not to be confuted. It is of him that Hume says: 'Most of the writings of that very ingenious author form the best lessons of scepticism which are to be found either among the ancient or modern philosophers, Bayle not excepted. He professes, however, in his title-page, to have composed his book against the sceptics as well as against the atheists and free-thinkers. But that all his arguments, though otherwise intended, are, in reality, merely sceptical, appears from this, *that they admit of no answer, and produce no conviction.* Their only effect is to cause that momentary amazement and irresolution and confusion, which is the result of scepticism.'

The place and importance of Hume in the stream of philosophical thought may be estimated from this. Both standpoints, he said, the idealistic and the realistic, are unassailable. But, instead of endeavouring, like all his predecessors, to combine or reconcile them, or to subordinate one to the other, he admitted the claims of both, and recognised both as completely in harmony with rational thought. But he added,

they contradict each other, and there is no higher court of appeal to decide the controversy, nothing therefore remains for mankind but—Doubt.

If we continue within the realms of the ideal, we have before us the magnificent spectacle of human thought proceeding by way of premisses and conclusion in Mathematics. Thought there arrives, by analysing itself, at necessary truths, which hold good everywhere and always, and require no experience to verify or confirm them. But what do we see underlying this analysis as its ultimate foundation? An abyss of paradoxes, paralogisms, and contradictions, exceeding anything that has ever been hatched by the craziest human imagination. In this abyss madness may be found to lurk, but certainly not a metaphysical solution of the nature of things.

In mathematics, where the relation only of our ideas is concerned, there is so much clearness, because we are dealing there with *quantity* alone, the most abstract of conceptions, with a more or less, in fact, and not with anything *real*, which would necessarily presuppose some *quality* by which it is determined. The simplest consideration, however, will suffice to show that there is no road leading from mathematical ideas to the reality of things; that in consequence this ideal region is altogether isolated and cut off from actual fact, although it is not improbable, as hinted by Hume, that these ideas themselves are derived from sensible perception and experience. (The latter view again destroys the universality and necessity of mathematical science.)

If, on the other hand, we betake ourselves to the region of realism, we are referred to experience alone; and here everything remains for ever a riddle to the analytic reason. Our reason seems to recognise causes

and effects while experience can only present to us contingencies, casual or accidental coincidences. All analysis of our own mental processes is then of no avail; the practician alone who transforms a series of empirical facts into an equivalent series of ideas, meets with success. Even the formation of ideas, which takes places in our mind, and is in harmony with the things of the outer world, is as great and insoluble a mystery to us as the nature of our soul. It is as inconceivable to our reason as the mysterious mechanism of our bodies, of which we seem to make use through the will.

It follows thence that the ideal is just as incomprehensible as the real; we can give no explanation, but the superficial empirical one, when we say, there is the *effect of habit*, here a certain *regularity of succession*. With the coordination of these two principles human knowledge—which for practical purposes is sufficient and complete—takes its rise. The wherefore of ideas, the wherefore of real sequences, the wherefore of the harmony between the real and the ideal,—this remains for ever unknown and inconceivable.

Thus rational thought had destroyed the claims of reason, and reason itself seemed to have committed suicide. The Cartesian Dubito was reinstated in all its rigour and severity. All the conclusions of past philosophic speculation were called in question. The systems built up with so much labour and acuteness by the dogmatists were arrayed against each other, and had met in a mutually destructive shock. Organic structures had been reduced to chaotic elemental forces. Dark clouds and gloomy mist overhang the intellectual world, and seem to hinder every outlook towards the lights of certain knowledge. But this

twilight gray announced the morning glow of the approaching day. A star was to rise from above the philosophic horizon, whose radiance was to obscure all previous achievements. It was reserved for Kant to sound the furthest depths of human reason, and so for ever to disperse the anxious doubts by which it was beset, to establish its just and inalienable claims, as well as to determine for all time the boundaries beyond which it must not venture, under penalty of losing itself upon the shoreless ocean of vain imaginations and wild and empty speculation.

He was to show why all earlier speculation had broken down, and must have broken down; he alone succeeded in solving all the contradictions and paradoxes in which the reason was entangled and in explaining them completely in accordance with their own nature, as he dropped the sounding line into depths which as yet no mortal mind had dared to fathom, and brought up from thence to the light of day news of the primary conditions and eternal postulates of reason.

It is therefore not too much to say that Kant is the greatest philosophical genius that has ever dwelt upon earth, and the 'Critique of Pure Reason' the highest achievement of human wisdom.

SUPPLEMENTS.

THE PRINCIPAL ADDITIONS MADE BY KANT IN THE SECOND EDITION OF THE CRITIQUE OF PURE REASON, PUBLISHED IN 1787.

SUPPLEMENT I.

Motto to Second Edition.

Baco de Verulamio.

Instauratio magna: Præfatio.

De nobis ipsis silemus: de re autem, quæ agitur, petimus, ut homines eam non opinionem, sed opus esse cogitent; ac pro certo habeant, non sectæ nos alicujus aut placiti, sed utilitatis et amplitudinis humanæ fundamenta moliri. Deinde ut suis commodis æqui . . . in commune consulant, . . . et ipsi in partem veniant. Præterea, ut bene sperent, neque Instaurationem nostram ut quiddam infinitum et ultra mortale fingant, et animo concipiant; quum revera sit infiniti erroris finis et terminus legitimus.

SUPPLEMENT II.

PREFACE TO THE SECOND EDITION. 1787. [p. vii]

WHETHER the treatment of that class of knowledge with which reason is occupied, follows the secure method of a science or not, can easily be determined by the result. If, after repeated preparations, it comes to a standstill, as soon as its real goal is approached, or is obliged, in order to reach it, to retrace its steps again and again, and strike into fresh paths; again, if it is impossible to produce unanimity among those who are engaged in the same work, as to the manner in which their common object should be obtained, we may be convinced that such a study is far from having attained to the secure method of a science, but is groping only in the dark. In that case we are conferring a great benefit on reason, if we only find out the right method, though many things should have to be surrendered as useless, which were comprehended in the original aim that had been chosen without sufficient reflection.

That *Logic*, from the earliest times, has [p. viii] followed that secure method, may be seen from the fact that since *Aristotle* it has not had to retrace a single step, unless we choose to consider as improvements the removal of some unnecessary subtleties, or the clearer definition of its matter, both of which refer to the elegance rather than to the solidity of the science. It is remarkable also, that to the present day, it has not been able to make one step

in advance, so that, to all appearance, it may be considered as completed and perfect. If some modern philosophers thought to enlarge it, by introducing *psychological* chapters on the different faculties of knowledge (faculty of imagination, wit, &c.), or *metaphysical* chapters on the origin of knowledge, or the different degrees of certainty according to the difference of objects (idealism, scepticism, &c.), or lastly, *anthropological* chapters on prejudices, their causes and remedies, this could only arise from their ignorance of the peculiar nature of logical science. We do not enlarge, but we only disfigure the sciences, if we allow their respective limits to be confounded: and the limits of logic are definitely fixed by the fact, that it is a science which has nothing to do but fully to exhibit and strictly to prove all formal [p. ix] rules of thought (whether it be *a priori* or empirical, whatever be its origin or its object, and whatever be the impediments, accidental or natural, which it has to encounter in the human mind).

That logic should in this respect have been so successful, is due entirely to its limitation, whereby it has not only the right, but the duty, to make abstraction of all the objects of knowledge and their differences, so that the understanding has to deal with nothing beyond itself, and its own forms. It was far more difficult, of course, for reason to enter on the secure method of science, considering that it has to deal not with itself only, but also with objects. Logic, therefore, as a kind of preparation (propædeutic) forms, as it were, the vestibule of the sciences only, and where real knowledge is concerned, is presupposed for critical purposes, while the acquisition of knowledge must be sought for in the sciences themselves, properly and objectively so called.

If there is to be in those sciences an element of reason, something in them must be known *a priori*, and knowledge may stand in a twofold relation to its object, by either simply *determining* it and [p. x] its concept (which must be supplied from elsewhere), or by making it *real* also. The former is *theoretical*, the latter *practical knowledge* of reason. In both the *pure* part, namely, that in which reason determines its object entirely *a priori* (whether it contain much or little), must be treated first, without mixing up with it what comes from other sources; for it is bad economy to spend blindly whatever comes in, and not to be able to determine, when there is a stoppage, which part of the income can bear the expenditure, and where reductions must be made.

Mathematics and *physics* are the two theoretical sciences of reason, which have to determine their *objects a priori*; the former quite purely, the latter partially so, and partially from other sources of knowledge besides reason. *Mathematics*, from the earliest times to which the history of human reason can reach, has followed, among that wonderful people of the Greeks, the safe way of a science. But it must not be supposed that it was as easy for mathematics as for logic, in which reason is concerned with itself alone, to find, or rather to make for itself that royal road. I believe, on the contrary, that [p. xi] there was a long period of tentative work (chiefly still among the Egyptians), and that the change is to be ascribed to a *revolution*, produced by the happy thought of a single man, whose experiment pointed unmistakably to the path that had to be followed, and opened and traced out for the most distant times the safe way of a science. The history of that intellectual revolution, which was far more important than the

discovery of the passage round the celebrated Cape of Good Hope, and the name of its fortunate author, have not been preserved to us. But the story preserved by Diogenes Laertius, who names the reputed author of the smallest elements of ordinary geometrical demonstration, even of such as, according to general opinion, do not require to be proved, shows, at all events, that the memory of the revolution, produced by the very first traces of the discovery of a new method, appeared extremely important to the mathematicians, and thus remained unforgotten. A new light flashed on the first man who demonstrated the properties of the isosceles triangle[1] (whether his name was *Thales* or any other name), for he found that he had not to investigate what he saw in the [p. xii] figure, or the mere concept of that figure, and thus to learn its properties; but that he had to produce his knowledge by means of what he had himself, according to concepts *a priori*, placed into that figure, and represented (by construction), so that, in order to know anything with certainty *a priori*, he must not attribute to that figure anything beyond what necessarily follows from what he has himself placed into it, in accordance with the concept.

It took a much longer time before physics entered on the high way of science: for no more than a century and half has elapsed, since the ingenious proposal of Bacon partly initiated that discovery, partly, as others were already on the right track, gave a new impetus to it,—a discovery which, like the former, can only be explained by a rapid intellectual revolution.

[1] Kant himself in a letter to Schütz (Darstellung seines Lebens von seinem Sohn, Halle, 1835, Band. II. S. 208) pointed out the mistake which appears in the preface to the 2nd edition, namely, gleichseitig (equilateral), instead of gleichschenkelig (isosceles).

In what I have to say, I shall confine myself to natural science, so far as it is founded on *empirical* principles.

When Galilei let balls of a particular weight, which he had determined himself, roll down an inclined plain, or Torricelli made the air carry a weight, which he had previously determined to be equal to that of a definite volume of water; or when, in later times, Stahl [1] changed metal into lime, and lime again into metals, by withdrawing and restoring some- [p. xiii] thing, a new light flashed on all students of nature. They comprehended that reason has insight into that only, which she herself produces on her own plan, and that she must move forward with the principles of her judgments, according to fixed law, and compel nature to answer her questions, but not let herself be led by nature, as it were in leading strings, because otherwise, accidental observations, made on no previously fixed plan, will never converge towards a necessary law, which is the only thing that reason seeks and requires. Reason, holding in one hand its principles, according to which concordant phenomena alone can be admitted as laws of nature, and in the other hand the experiment, which it has devised according to those principles, must approach nature, in order to be taught by it: but not in the character of a pupil, who agrees to everything the master likes, but as an appointed judge, who compels the witnesses to answer the questions which he himself proposes. Therefore even the science of physics entirely owes the beneficial revolution in its character to the happy thought, that we ought to seek in nature [p. xiv]

[1] I am not closely following here the course of the history of the experimental method, nor are the first beginnings of it very well known.

(and not import into it by means of fiction) whatever reason must learn from nature, and could not know by itself, and that we must do this in accordance with what reason itself has originally placed into nature. Thus only has the study of nature entered on the secure method of a science, after having for many centuries done nothing but grope in the dark.

Metaphysic, a completely isolated and speculative science of reason, which declines all teaching of experience, and rests on concepts only (not on their application to intuition, as mathematics), in which reason therefore is meant to be her own pupil, has hitherto not been so fortunate as to enter on the secure path of a science, although it is older than all other sciences, and would remain, even if all the rest were swallowed up in the abyss of an all-destroying barbarism. In metaphysic, reason, even if it tries only to understand *a priori*, (as it pretends to do,) those laws which are confirmed by the commonest experience, is constantly brought to a standstill, and we are obliged again and again to retrace our steps, because they do not lead us where we want to go; while as to any unanimity among those who are engaged in [p. xv] the same work, there is so little of it in metaphysic, that it has rather become an arena, specially destined, it would seem, for those who wish to exercise themselves in mock fights, and where no combatant has, as yet, succeeded in gaining an inch of ground that he could call permanently his own. It cannot be denied, therefore, that the method of metaphysic has hitherto consisted in groping only, and, what is the worst, in groping among mere concepts.

What then can be the cause that hitherto no secure method of science has been discovered? Shall

we say that it is impossible? Then why should nature have visited our reason with restless aspiration to look for it, as if it were its most important concern? Nay more, how little should we be justified in trusting our reason if, with regard to one of the most important objects we wish to know, it not only abandons us, but lures us on by vain hopes, and in the end betrays us! Or, if hitherto we have only failed to meet with the right path, what indications are there to make us hope that, if we renew our researches, we shall be more successful than others before us?

The examples of mathematics and natural science, which by one revolution have become what [p. xvi] they now are, seem to me sufficiently remarkable to induce us to consider, what may have been the essential element in that intellectual revolution which has proved so beneficial to them, and to make the experiment, at least, so far as the analogy between them, as sciences of reason, with metaphysic allows it, of imitating them. Hitherto it has been supposed that all our knowledge must conform to the objects: but, under that supposition, all attempts to establish anything about them *a priori*, by means of concepts, and thus to enlarge our knowledge, have come to nothing. The experiment therefore ought to be made, whether we should not succeed better with the problems of metaphysic, by assuming that the objects must conform to our mode of cognition, for this would better agree with the demanded possibility of an *a priori* knowledge of them, which is to settle something about objects, before they are given us. We have here the same case as with the first thought of Copernicus, who, not being able to get on in the explanation of the movements of the heavenly bodies,

as long as he assumed that all the stars turned round the spectator, tried, whether he could not succeed better, by assuming the spectator to be turning round, and the stars to be at rest. A similar experiment may be tried in metaphysic, so far as the *intuition* of objects is concerned. If the intuition had to conform to the constitution of objects, I do not see how we could know anything of it *a priori*; but if the object (as an object of the senses) conform to the constitution of our faculty of intuition, I can very well conceive such a possibility. As, however, I cannot rest in these intuitions, if they are to become knowledge, but have to refer them, as representations, to something as their object, and must determine that object by them, I have the choice of admitting, either that the *concepts*, by which I carry out that determination, conform to the object, being then again in the same perplexity on account of the manner how I can know anything about it *a priori*; or that the objects, or what is the same, the experience in which alone they are known (as given objects), must conform to those concepts. In the latter case, the solution becomes more easy, because experience, as a kind of knowledge, requires understanding, and I must therefore, even before objects are given to me, presuppose the rules of the understanding as existing within me *a priori*, these rules being expressed in concepts *a priori*, to which all objects of experience must necessarily conform, and with which they must agree. With regard to objects, so [p. xviii] far as they are conceived by reason only, and conceived as necessary, and which can never be given in experience, at least in that form in which they are conceived by reason, we shall find that the attempts at conceiving them (for they must admit of being

conceived) will furnish afterwards an excellent test of our new method of thought, according to which we do not know of things anything *a priori*, except what we ourselves put into them[1].

This experiment succeeds as well as we could desire, and promises to metaphysic, in its first part, which deals with concepts *a priori*, of which the corresponding objects may be given in experience, the secure method of a science. For by thus [p. xix] changing our point of view, the possibility of knowledge *a priori* can well be explained, and, what is still more, the laws which *a priori* lie at the foundation of nature, as the sum total of the objects of experience, may be supplied with satisfactory proofs, neither of which was possible with the procedure hitherto adopted. But there arises from this deduction of our faculty of knowing *a priori*, as given in the first part of metaphysic, a somewhat startling result, apparently most detrimental to the objects of metaphysic that have to be treated in the second

[1] This method, borrowed from the student of nature, consists in our looking for the elements of pure reason in that *which can be confirmed or refuted by experiment*. Now it is impossible, in order to test the propositions of pure reason, particularly if they venture beyond all the limits of possible experience, to make any experiment with their *objects* (as in natural science); we can therefore only try with *concepts* and *propositions* which we admit *a priori*, by so contriving that the same objects may be considered on one side as objects of the senses and of the understanding in experience, and, on the *other*, as objects which are only thought, intended, it may be, for the isolated reason which strives to go beyond all the limits of experience. This gives us two different sides to be looked at; and if we find that, by looking on things from that twofold point of view, there is an agreement with the principle of pure reason, while by admitting one point of view only, there arises an inevitable conflict with reason, then the experiment decides in favour of the correctness of that distinction.

part, namely the impossibility of going with it beyond the frontier of possible experience, which is precisely the most essential purpose of metaphysical [p. xx] science. But here we have exactly the experiment which, by disproving the opposite, establishes the truth of our first estimate of the knowledge of reason *a priori*, namely, that it can refer to phenomena only, but must leave the thing by itself as unknown to us, though as existing by itself. For that which impels us by necessity to go beyond the limits of experience and of all phenomena, is the *unconditioned*, which reason postulates in all things by themselves, by necessity and by right, for everything conditioned, so that the series of conditions should thus become complete. If then we find that, under the supposition of our experience conforming to the objects as things by themselves, it is *impossible to conceive* the unconditioned *without contradiction*, while, under the supposition of our representation of things, as they are given to us, not conforming to them as things by themselves, but, on the contrary, of the objects conforming to our mode of representation, that *contradiction vanishes*, and that therefore the unconditioned must not be looked for in things, so far as we know them (so far as they are given to us), but only so far as we do not know them (as things by themselves), we clearly perceive that, what we at first assumed tentatively only, is fully confirmed [1]. [p. xxi]

[1] This experiment of pure reason has a great similarity with that of the *chemists*, which they sometimes call the experiment of *reduction*, or the *synthetical process* in general. The *analysis* of the *metaphysician* divided pure knowledge *a priori* into two very heterogeneous elements, namely, the knowledge of things as phenomena, and of things by themselves. *Dialectic* combines these two again, to bring them into *harmony* with the necessary idea of

But, after all progress in the field of the supersensuous has thus been denied to speculative reason, it is still open to us to see, whether in the practical knowledge of reason data may not be found which enable us to determine that transcendent concept of the unconditioned which is demanded by reason, in order thus, according to the wish of metaphysic, to get beyond the limits of all possible experience, by means of our knowledge *a priori*, which is possible to us for practical purposes only. In this case, speculative reason has at least gained for us room for such an extension of knowledge, though it had to leave it empty, so that we are not only at liberty, but are really called upon to fill it up, if we are able, by *practical* data of reason [1]. [p. xxii]

The very object of the critique of pure speculative reason consists in this attempt at changing the old procedure of metaphysic, and imparting to it the

the *unconditioned*, demanded by reason, and then finds that this harmony can never be obtained, except through the above distinction, which therefore must be supposed to be true.

[1] In the same manner the laws of gravity, determining the movements of the heavenly bodies, imparted the character of established certainty to what Copernicus had assumed at first as an hypothesis only, and proved at the same time the invisible force (the Newtonian attraction) which holds the universe together, which would have remained for ever undiscovered, if Copernicus had not dared, by an hypothesis, which, though contradicting the senses, was yet true, to seek the observed movements, not in the heavenly bodies, but in the spectator. I also propose in this preface my own view of metaphysics, which has so many analogies with the Copernican hypothesis, as an hypothesis only, though, in the Critique itself, it is proved by means of our representations of space and time, and the elementary concepts of the understanding, not hypothetically, but apodictically; for I wish that people should observe the first attempts at such a change, which must always be hypothetical.

secure method of a science, after having completely revolutionized it, following the example of geometry and physical science. That critique is a treatise on the method (*Traité de la méthode*), not a system of the science itself; but it marks out nevertheless the whole plan of that science, both with regard to its limits, and to its internal organisation. For pure [p. xxiii] speculative reason has this peculiar advantage that it is able, nay bound to measure its own powers, according to the different ways in which it chooses its own objects, and to completely enumerate the different ways of choosing problems; thus tracing a complete outline of a system of metaphysic. This is due to the fact that, with regard to the first point, nothing can be attributed to objects in knowledge *a priori*, except what the thinking subject takes from within itself; while, with regard to the second point, reason, so far as its principles of cognition are concerned, forms a separate and independent unity, in which, as in an organic body, every member exists for the sake of all others, and all others exist for the sake of the one, so that no principle can be safely applied in *one* relation, unless it has been carefully examined in *all* its relations, to the whole employment of pure reason. Hence, too, metaphysic has this singular advantage, an advantage which cannot be shared by any other science, in which reason has to deal with objects (for *Logic* deals only with the form of thought in general,) that, if it has once attained, by means of this critique, to the secure method of a science, it can completely comprehend the whole field of knowledge [p. xxiv] pertaining to it, and thus finish its work and leave it to posterity, as a capital that can never be added to, because it has only to deal with principles and the limits of their employment, which are fixed by those

principles themselves. And this completeness becomes indeed an obligation, if it is to be a fundamental science, of which we must be able to say, 'nil actum reputans, si quid superesset agendum.'

But it will be asked, what kind of treasure is it which we mean to bequeath to posterity in this metaphysic of ours, after it has been purified by criticism, and thereby brought to a permanent condition? After a superficial view of this work, it may seem that its advantage is *negative* only, warning us against venturing with speculative reason beyond the limits of experience. Such is no doubt its primary use: but it becomes *positive*, when we perceive that the principles with which speculative reason ventures beyond its limits, lead inevitably, not to an *extension*, but, if carefully considered, to a *narrowing* of the employment of reason, because, by indefinitely extending the limits of sensibility, to which they [p. xxv] properly belong, they threaten entirely to supplant the pure (practical) employment of reason. Hence our *critique*, by limiting speculative reason to its proper sphere, is no doubt *negative*, but by thus removing an impediment, which threatened to narrow, or even entirely to destroy its practical employment, it is in reality of *positive*, and of very important use, if only we are convinced that there is an absolutely necessary practical use of pure reason (the moral use), in which reason must inevitably go beyond the limits of sensibility, and though not requiring for this purpose the assistance of speculative reason, must at all events be assured against its opposition, lest it be brought in conflict with itself. To deny that this service, which is rendered by criticism, is a *positive* advantage, would be the same as to deny that the police confers upon us any positive advantage, its principal occupa-

tion being to prevent violence, which citizens have to apprehend from citizens, so that each may pursue his vocation in peace and security. We had established in the analytical part of our critique the following points:—First, that space and time are only forms of sensuous intuition, therefore conditions of the existence of things, as phenomena only; Secondly, that we have no concepts of the understanding, and therefore nothing whereby we can arrive at the knowledge of things, except in so far as an intuition cor- [p. xxvi] responding to these concepts can be given, and consequently that we cannot have knowledge of any object, as a thing by itself, but only in so far as it is an object of sensuous intuition, that is, a phenomenon. This proves no doubt that all speculative knowledge of reason is limited to objects of *experience*; but it should be carefully borne in mind, that this leaves it perfectly open to us, to *think* the same objects as things by themselves, though we cannot *know* them[1]. For otherwise we should arrive at the absurd conclusion, that there is phenomenal appearance [p. xxvii] without something that appears. Let us suppose that the necessary distinction, established in our critique, between things as objects of experience and the same things by themselves, had not been made. In that

[1] In order to *know* an object, I must be able to prove its possibility, either from its reality, as attested by experience, or *a priori*, by means of reason. But I can *think* whatever I please, provided only I do not contradict myself, that is, provided my conception is a possible thought, though I may be unable to answer for the existence of a corresponding object in the sum total of all possibilities. Before I can attribute to such a concept objective reality (real possibility, as distinguished from the former, which is purely logical), something more is required. This something more, however, need not be sought for in the sources of theoretical knowledge, for it may be found in those of practical knowledge also.

case, the principle of causality, and with it the mechanism of nature, as determined by it, would apply to all things in general, as efficient causes. I should then not be able to say of one and the same being, for instance the human soul, that its will is free, and, at the same time, subject to the necessity of nature, that is, not free, without involving myself in a palpable contradiction: and this because I had taken the soul, in both propositions, in *one and the same sense*, namely, as a thing in general (as something by itself), as, without previous criticism, I could not but take it. If, however, our criticism was true, in teaching us to take an object in two senses, namely, either as a phenomenon, or as a thing by itself, and if the deduction of our concepts of the understanding was correct, and the principle of causality applies to things only, if taken in the first sense, namely so far as they are objects of experience, but not to things, if taken in their second sense, we can, without any contradiction, think the same will as phenomenal (in visible actions) as necessarily conforming to [p. xxviii] the law of nature, and so far, *not free*, and yet, on the other hand, if belonging to a thing by itself, as not subject to that law of nature, and therefore *free*. Now it is quite true, that I may not *know* my soul, as a thing by itself, by means of speculative reason (still less through empirical observation), and consequently may not know freedom either, as the quality of a being to which I attribute effects in the world of sense, because, in order to do this, I should have to know such a being as existing, and yet as not determined in time (which, as I cannot provide my concept with any intuition, is impossible). This, however, does not prevent me from *thinking* freedom; that is, my representation of it contains at least no contradiction within

itself, if only our critical distinction of the two modes of representation (the sensible and the intelligible), and the consequent limitation of the concepts of the pure understanding, and of the principles based on them, has been properly carried out. If, then, morality necessarily presupposes freedom (in the strictest sense) as a property of our will, producing, as *a priori data* of it, practical principles, belonging originally to our reason, which, without freedom, would be absolutely impossible, while speculative reason proves [p. xxix] that such a freedom cannot even be thought, the former supposition, namely, the moral one, would necessarily have to yield to another, the opposite of which involves a palpable contradiction, so that *freedom*, and with it morality (for its opposite contains no contradiction, unless freedom is presupposed), would have to make room for the *mechanism* of nature. Now, however, as morality requires nothing but that freedom should only not contradict itself, and that, though unable to understand, we should at least be able to think it, there being no reason why freedom should interfere with the natural mechanism of the same act (if only taken in a different sense), the doctrine of morality may well hold its place, and the doctrine of nature may hold its place too, which would have been impossible, if our critique had not previously taught us our inevitable ignorance with regard to things by themselves, and limited everything, which we are able to *know* theoretically, to mere phenomena.

The same discussion as to the positive advantage to be derived from the critical principles of pure reason, might be repeated with regard to the concept of *God*, and of the *simple nature* of our *soul*; but, for the sake of brevity, I shall pass this by. We have seen, therefore, that I am not allowed even to [p. xxx]

assume, for the sake of the necessary practical employment of my reason, *God*, *freedom*, and *immortality*, if I cannot *deprive* speculative reason of its pretensions to transcendent insights, because reason, in order to arrive at these, must use principles which are intended originally for objects of possible experience only, and which, if in spite of this, they are applied to what cannot be an object of experience, really change this into a phenomenon, thus rendering all *practical extension* of pure reason impossible. I had therefore to remove *knowledge*, in order to make room for *belief*. For the dogmatism of metaphysic, that is, the presumption that it is possible to achieve anything in metaphysic without a previous criticism of pure reason, is the source of all that unbelief, which is always very dogmatical, and wars against all morality.

If then, it may not be too difficult to leave a bequest to posterity, in the shape of a systematical metaphysic, carried out according to the critique of pure reason, such a bequest is not to be considered therefore as of little value, whether we regard the improvement which reason receives through the secure method of a science, in place of its groundless groping and uncritical vagaries, or whether [p. xxxi] we look to the better employment of the time of our enquiring youth, who, if brought up in the ordinary dogmatism, are early encouraged to indulge in easy speculations on things of which they know nothing, and of which they, as little as anybody else, will ever understand anything; neglecting the acquirement of sound knowledge, while bent on the discovery of new metaphysical thoughts and opinions. The greatest benefit however will be, that such a work will enable us to put an end for ever to all objections to morality

and religion, according to the Socratic method, namely, by the clearest proof of the ignorance of our opponents. Some kind of metaphysic has always existed, and will always exist, and with it a dialectic of pure reason, as being natural to it. It is therefore the first and most important task of philosophy to deprive metaphysic, once for all, of its pernicious influence, by closing up the sources of its errors.

In spite of these important changes in the whole field of science, and of the *losses* which speculative reason must suffer in its fancied possessions, all general human interests, and all the advan- [p. xxxii] tages which the world hitherto derived from the teachings of pure reason, remain just the same as before. The loss, if any, affects only the *monopoly of the schools*, and by no means the *interests* of *humanity*. I appeal to the staunchest dogmatist, whether the proof of the continued existence of our soul after death, derived from the simplicity of the substance, or that of the freedom of the will, as opposed to the general mechanism of nature, derived from the subtle, but inefficient, distinction between subjective and objective practical necessity, or that of the existence of God, derived from the concept of an Ens realissimum (the contingency of the changeable, and the necessity of a prime mover), have ever, after they had been started by the schools, penetrated the public mind, or exercised the slightest influence on its convictions? If this has not been, and in fact could not be so, on account of the unfitness of the ordinary understanding for such subtle speculations; and if, on the contrary, with regard to the first point, the hope of a *future life* has chiefly rested on that peculiar character of human nature, never to be satisfied by what is merely temporal (and insufficient, therefore, for the

character of its whole destination); if with regard to the second, the clear consciousness of *freedom* [p. xxxiii] was produced only by the clear exhibition of duties, in opposition to all the claims of sensuous desires; and if, lastly, with regard to the third, the belief in a great and wise *Author of the world* has been supported entirely by the wonderful beauty, order, and providence, everywhere displayed in nature, then this possession remains not only undisturbed, but acquires even greater authority, because the schools have now been taught, not to claim for themselves any higher or fuller insight on a point which concerns general human interests, than what is equally within the reach of the great mass of men, and to confine themselves to the elaboration of these universally comprehensible, and, for moral purposes, quite sufficient proofs. The change therefore affects the arrogant pretensions of the schools only, which would fain be considered as the only judges and depositaries of such truth (as they are, no doubt, with regard to many other subjects), allowing to the public its use only, and trying to keep the key to themselves, quod mecum nescit, solus vult scire videri. At the same time full satisfaction is given to the more moderate claims [p. xxxiv] of speculative philosophers. They still remain the exclusive depositors of a science which benefits the masses without their knowing it, namely the critique of reason. That critique can never become popular, nor does it need to be so, because, if on the one side the public has no understanding for the fine-drawn arguments in support of useful truths, it is not troubled on the other by the equally subtle objections. It is different with the schools which, in the same way as every man who has once risen to the height of speculation, must know both the pro's and the con's,

and are bound, by means of a careful investigation of the rights of speculative reason, to prevent, once for all, the scandal which, sooner or later, is sure to be caused even to the masses, by the quarrels in which metaphysicians (and, as such, theologians also) become involved, if ignorant of our critique, and by which their doctrine becomes in the end entirely perverted. Thus, and thus alone, can the very root be cut off of *materialism, fatalism, atheism, free-thinking unbelief, fanaticism*, and *superstition*, which may become universally injurious, and finally of *idealism* and *scepticism* also, which are dangerous rather to the schools, and can scarcely ever penetrate into the public. If [p. xxxv] governments think proper ever to interfere with the affairs of the learned, it would be far more consistent with their wise regard for science as well as for *society*, to favour the freedom of such a criticism by which alone the labours of reason can be established on a firm footing, than to support the ridiculous despotism of the schools, which raise a loud clamour of public danger, whenever the cobwebs are swept away of which the public has never taken the slightest notice, and the loss of which it can therefore never perceive.

Our critique is not opposed to the *dogmatical procedure* of reason, as a science of pure knowledge (for this must always be dogmatical, that is, derive its proof from sure principles *a priori*), but to *dogmatism* only, that is, to the presumption, that it is possible to make any progress with pure (philosophical) knowledge, consisting of concepts, and guided by principles, such as reason has long been in the habit of employing, without first enquiring in what way, and by what right, it has come possessed of them. Dogmatism is therefore the dogmatical procedure of pure reason, *without a previous criticism of its own powers*; and

our opposition to this is not intended to defend either that loquacious shallowness which arrogates [p. xxxvi] to itself the good name of popularity, much less that scepticism which makes short work with the whole of metaphysic. On the contrary, our critique is meant to form a necessary preparation in support of a thoroughly scientific system of metaphysic, which must necessarily be carried out dogmatically and strictly systematically, so as to satisfy all the demands, not so much of the public at large, as of the schools, this being an indispensable condition, as it has undertaken to carry out its work entirely *a priori*, and thus to the complete satisfaction of speculative reason. In the execution of this plan, as traced out by the critique, that is, in a future system of metaphysic, we shall have to follow in the strict method of the celebrated Wolf, the greatest of all dogmatic philosophers, who first showed (and by his example called forth, in Germany, that spirit of thoroughness, which is not yet extinct) how the secure method of a science could be attained only by a legitimate establishment of principles, a clear definition of concepts, an attempt at strictness of proof, and an avoidance of all bold combinations in concluding. He was therefore most eminently qualified to raise metaphysics to the dignity of a science, if it had only occurred to him, by criticism of the organum, namely of pure reason itself, first to prepare his field,—an omission to be ascribed, not so [p. xxxvii] much to himself as to the dogmatical spirit of his age, and with regard to which the philosophers of his own, as well as of all previous times, have no right to reproach each other. Those who reject, at the same time, the method of Wolf, and the procedure of the critique of pure reason, can have no other aim but to shake off the fetters of *science* altogether,

and thus to change work into play, conviction into opinion, and philosophy into philodoxy.

With regard to this second edition, I have tried, as was but fair, to do all I could in order to remove, as far as possible, the difficulties and obscurities which, not perhaps without my fault, have misled even acute thinkers in judging of my book. In the propositions themselves, and their proofs, likewise in the form and completeness of the whole plan, I have found nothing to alter, which is due partly to the long-continued examination to which I had subjected them, before submitting them to the public, and partly to the nature of the subject itself. For pure speculative reason is so constituted that it forms a true organism, in which everything is *organic*, the whole being there for the sake of every [p. xxxviii] part, and every part for the sake of the whole, so that the smallest imperfection, whether a fault or a deficiency, must inevitably betray itself in use. I venture to hope that this system will maintain itself unchanged for the future also. It is not self-conceit which justifies me in this confidence, but the experimental evidence produced by the identity of the result, whether we proceed progressively from the smallest elements to the whole of pure reason, or retrogressively from the whole (for this also is given by the practical objects of reason) to every single part; the fact being, that an attempt at altering even the smallest item produces at once contradictions, not only in the system, but in human reason in general. With regard to the *style*, however, much remains to be done; and for that purpose, I have

endeavoured to introduce several improvements into this second edition, which are intended to remove, first, misapprehensions in the Æsthetic, especially with regard to the concept of time: secondly, obscurities in the deduction of the concepts of reason: thirdly, a supposed want of sufficient evidence, in proving the propositions of the pure understanding: fourthly, the false interpretation put on the paralogisms with which we charged rational psychology. To this point (only to the end of the first chapter of transcendental Dialectic) do the changes of style and repre- [p. xxxix] sentation[1] extend, and no further. Time was too

[1] The only thing which might be called an addition, though in the method of proof only, is the new refutation of *psychological idealism*, and the strict (and as I believe the only possible) proof of the objective reality of external phenomena on p. 275 (Suppl. XXI). That idealism may be considered entirely innocent with respect to the essential aims of metaphysic (though it is not so in reality), yet it remains a scandal to philosophy, and to human reason in general, that we should have to accept the existence of things without us (from which we derive the whole material of knowledge for our own internal sense) on faith only, unable to meet with any satisfactory proof an opponent, who is pleased to doubt it. (See p. 476.) It will probably be urged against this proof that, after all, I am immediately conscious of that only which is within me, that is, of my *representation* of external things, and that consequently it must still remain uncertain whether there be outside me anything corresponding to it, or not. But by internal *expe-* [p. xl] *rience* I am conscious of *my existence in time* (consequently also, of its determinability in time); and this is more than to be conscious of my representation only, and yet identical with the *empirical consciousness of my existence*, which can be itself determined only by something connected with my existence, yet outside me. This consciousness of my existence in time is therefore connected as identical with the consciousness of relation to something *outside* me; so that it is experience, and not fiction, sense, and not imagination, which indissolubly connects the external with my internal sense. The external sense is by itself a relation of intuition to something real outside me; and its real, in contradistinction to a

short for doing more, nor did I, with regard to the rest, meet with any misapprehensions on the [p. xl] part of competent and impartial judges. These, [p. xli],

purely imaginary character, rests entirely on its being indissolubly connected with internal experience, as being the condition of its possibility. This is what happens here. If with the *intellectual consciousness* of my existence in the representation, *I am*, which accompanies all my judgments and all acts of my understanding, I could at the same time connect a determination of that existence of mine by means of *intellectual intuition*, then that determination would not require the consciousness of relation to something outside me. But although that intellectual consciousness comes first, the inner intuition, in which alone any existence can be determined, is sensuous and dependent on the condition of time; and that determination again, and therefore internal experience itself, depends on something permanent which is not within me, consequently on something outside me only, to which I must consider myself as standing in a certain relation. Hence the reality of the external sense is necessarily connected, in order to make experience possible at all, with the reality of the internal sense; that is, I am conscious, with the same certainty, that there are things outside me which have a reference to my sense, as that I exist myself in time. In order to ascertain to what given intuitions objects outside me really correspond, (these intuitions belonging to the *external sense*, and not to the faculty of imagination) we must in each single case apply the rules according to which experience in general (even internal) is distinguished from imaginations, the proposition that there really is an external experience, being always taken for granted. It may be well to add here the remark that the *representation of something permanent* in existence is not the same as a *permanent representation*; for the latter can change and alternate, as all our representations, even those of matter, and may yet refer to something permanent, which must therefore be something external, and different from all my representations, the *existence* of which is necessarily involved in the *determination* of my own existence, and constitutes with it but one experience, which could never take place internally, unless (in part) it were external also. The *how* admits here of as little explanation as the permanent in time in general, the co-existence of which with the variable produces the concept of change.

even though I must not name them with that praise which is due to them, will easily perceive in the proper place, that I have paid careful attention to their remarks. [p. xlii]

These improvements, however, entail a small loss to the reader. It was inevitable, without making the book too voluminous, to leave out or abridge several passages which, though not essential to the completeness of the whole, may yet, as useful for other purposes, be missed by some readers. Thus only could I gain room for my new and more intelligible representation of the subject which, though it changes absolutely nothing with regard to propositions, and even to proofs, yet deviates so considerably from the former, in the whole arrangement of the argument, that mere additions and interpolations would not have been sufficient. This small loss, which every reader may easily supply by reference to the first edition, will I hope be more than compensated for by the greater clearness of the present.

I have observed with pleasure and thankfulness in various publications (containing either reviews or separate essays), that the spirit of thoroughness is not yet dead in Germany, but has only been silenced for a short time by the clamour of a fashionable and [p. xliii] pretentious licence of thought, and that the difficulties which beset the thorny path of my critique, which are to lead to a truly scientific and, as such, permanent, and therefore most necessary, study of pure reason, have not discouraged bold and clear heads from mastering my book. To these excellent men, who so happily blend thorough knowledge with a talent for lucid exposition (to which I can lay no claim), I leave the task of bringing my, in that respect far from perfect, work to greater perfection. There is no

danger of its being refuted, though there is of its being misunderstood. For my own part, I cannot henceforth enter on controversies, though I shall carefully attend to all hints, whether from friends or opponents, in order to utilise them in a future elaboration of the whole system, according to the plan traced out in this propædeutic. As during these labours I have advanced pretty far in years (this very month, into my sixty-fourth year), I must be careful in spending my time, if I am to carry out my plan, of furnishing a metaphysic of nature, and a metaphysic of morals, in confirmation of the truth of my critique both of speculative and of practical reason, and must leave the elucidation of such obscurities as could at first be hardly avoided [p. xliv] in such a work, and likewise the defence of the whole, to those excellent men who have made it their own. At single points every philosophical treatise may be pricked (for it cannot be armed at all points, like a mathematical one), while yet the organic structure of the system, considered as a whole, has not therefore to apprehend the slightest danger. Few only have that pliability of intellect to take in the whole of a system, if it is new; still fewer have an inclination for it, because they dislike every innovation. If we take single passages out of their connection, and contrast them with each other, it is easy to pick out apparent contradictions, particularly in a work written with all the freedom of a running speech. In the eyes of those who rely on the judgment of others, such contradictions may throw an unfavourable light on any work; but they are easily removed, if we ourselves have once grasped the idea of the whole. And, if a theory possesses stability in itself, then this action and reaction of praise and blame,

which at first seemed so dangerous, serve only in time to rub off its superficial inequalities: nay, secure to it, in a short time, the requisite elegance also, if only men of insight, impartiality, and true popularity will devote themselves to its study.

Königsberg, April 1787.

SUPPLEMENT III.

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SUPPLEMENT IV. [See vol. ii. p. 1]

INTRODUCTION.

I.

Of the Difference between pure and empirical Knowledge.

THAT all our knowledge begins with experience there can be no doubt. For how should the faculty of knowledge be called into activity, if not by objects which affect our senses, and which either produce representations by themselves, or rouse the activity of our understanding to compare, to connect, or to separate them; and thus to convert the raw material of our sensuous impressions into a knowledge of objects, which we call experience? In respect of time, therefore, no knowledge within us is antecedent to experience, but all knowledge begins with it.

But although all our knowledge begins with experience, it does not follow that it arises from experience. For it is quite possible that even our empirical experience is a compound of that which we receive through impressions, and of that which our own faculty of knowledge (incited only by sensuous impressions), supplies from itself, a supplement which we do not distinguish from that raw material, until long practice has roused our attention and rendered us capable of separating one from the other.

It is therefore a question which deserves at least

closer investigation, and cannot be disposed of at first sight, whether there exists a knowledge independent of experience, and even of all impressions of the senses? Such *knowledge* is called *a priori*, and distinguished from *empirical* knowledge, which has its sources *a posteriori*, that is, in experience.

This term *a priori*, however, is not yet definite enough to indicate the full meaning of our question. For people are wont to say, even with regard to knowledge derived from experience, that we have it, or might have it, *a priori*, because we derive it from experience, not *immediately*, but from a general rule, which, however, has itself been derived from experience. Thus one would say of a person who undermines the foundations of his house, that he might have known *a priori* that it would tumble down, that is, that he need not wait for the experience of its really tumbling down. But still he could not know this entirely *a priori*, because he had first to learn from experience that bodies are heavy, and will fall when their supports are taken away.

We shall therefore, in what follows, understand by knowledge *a priori* knowledge which is *absolutely* independent of all experience, and not of this or that experience only. Opposed to this is empirical knowledge, or such as is possible *a posteriori* only, that is, by experience. Knowledge *a priori*, if mixed up with nothing empirical, is called *pure*. Thus the proposition, for example, that every change has its cause, is a proposition *a priori*, but not pure: because change is a concept which can only be derived from experience.

II.

We are in possession of certain Cognitions a priori, *and even the ordinary understanding is never without them.*

All depends here on a criterion, by which we may safely distinguish between pure and empirical knowledge. Now experience teaches us, no doubt, that something is so or so, but not that it cannot be different. *First*, then, if we have a proposition, which is thought, together with its necessity, we have a judgment *a priori*; and if, besides, it is not derived from any proposition, except such as is itself again considered as necessary, we have an absolutely *a priori* judgment. *Secondly*, experience never imparts to its judgments true or strict, but only assumed or relative universality (by means of induction), so that we ought always to say, so far as we have observed hitherto, there is no exception to this or that rule. If, therefore, a judgment is thought with strict universality, so that no exception is admitted as possible, it is not derived from experience, but valid absolutely *a priori*. Empirical universality, therefore, is only an arbitrary extension of a validity which applies to most cases, to one that applies to all: as, for instance, in the proposition, all bodies are heavy. If, on the contrary, strict universality is essential to a judgment, this always points to a special source of knowledge, namely, a faculty of knowledge *a priori*. Necessity, therefore, and strict universality are safe criteria of knowledge *a priori*, and are inseparable one from the other. As, however, in the use of these criteria, it is sometimes easier to show the empirical limitation than the contingency of

judgments, and as it is sometimes more convincing to prove the unlimited universality which we attribute to a judgment than its necessity, it is advisable to use both criteria separately, each being by itself infallible.

That there really exist in our knowledge such necessary, and in the strictest sense universal, and therefore, pure judgments *a priori*, is easy to show. If we want a scientific example, we have only to look to any of the propositions of mathematics; if we want one from the sphere of the ordinary understanding, such a proposition as that each change must have a cause, will answer the purpose; nay, in the latter case, even the concept of cause contains so clearly the concept of the necessity of its connection with an effect, and of the strict universality of the rule, that it would be destroyed altogether if we attempted to derive it, as Hume does, from the frequent concomitancy of that which happens with, that which precedes, and from a habit arising thence, —therefore from a purely subjective necessity of connecting representations. It is possible even, without having recourse to such examples in proof of the reality of pure propositions *a priori* within our knowledge, to prove their indispensability for the possibility of experience itself, thus proving it *a priori*. For whence should experience take its certainty, if all the rules which it follows were always again and again empirical, and therefore contingent and hardly fit to serve as first principles? For the present, however, we may be satisfied for having shown the pure employment of the faculty of our knowledge as a matter of fact, with the criteria of it.

Not only in judgments, however, but even in certain concepts, can we show their origin *a priori*.

Take away, for example, from the concept of body, as supplied by experience, everything that is empirical, one by one; such as colour, hardness, or softness, weight, and even impenetrability, and there still remains the space which the body (now entirely vanished) occupied: that you cannot take away. And in the same manner, if you remove from your empirical concept of any object, corporeal or incorporeal, all properties which experience has taught you, you cannot take away from it that property by which you conceive it as a substance, or inherent in a substance (although such a concept contains more determinations than that of an object in general). Convinced, therefore, by the necessity with which that concept forces itself upon you, you will have to admit that it has its seat in your faculty of knowledge *a priori*.

SUPPLEMENT V. [See vol. ii. p. 7]

EMPIRICAL judgments, as such, are all synthetical; for it would be absurd to found an analytical judgment on experience, because, in order to form such a judgment, I need not at all step out of my concept, or appeal to the testimony of experience. That a body is extended, is a proposition perfectly certain *a priori*, and not an empirical judgment. For, before I call in experience, I am already in possession of all the conditions of my judgment in the concept of body itself. I have only to draw out from it, according to the principle of contradiction, the required predicate, and I thus become conscious, at the same time, of the necessity of the judgment, which experience could never teach me. But, though I do not include the predicate of gravity in the general concept of body, that concept, nevertheless, indicates an object of experience through one of its parts: so that I may add other parts also of the same experience, besides those which belonged to the former concept. I may, first, by an analytical process, realise the concept of body, through the predicates of extension, impermeability, form, &c., all of which are contained in it. Afterwards I expand my knowledge, and looking back to the experience from which my concept of body was abstracted, I find gravity always connected with the before mentioned predicates, and therefore I add it synthetically to that concept as a predicate. It is, therefore, experience on which the possibility of the synthesis of the predicate of

gravity with the concept of body is founded: because both concepts, though neither of them is contained in the other, belong to each other, though accidentally only, as parts of a whole, namely, of experience, which is itself a synthetical connection of intuitions.

SUPPLEMENT VI. [See vol. ii. p. 9]

V.

In all theoretical Sciences of reason synthetical Judgments a priori *are contained as principles.*

1. ALL mathematical judgments are synthetical. This proposition, though incontestably certain, and very important to us for the future, seems to have hitherto escaped the observation of those who are engaged in the anatomy of human reason: nay, to be directly opposed to all their conjectures. For as it was found that all mathematical conclusions proceed according to the principle of contradiction (which is required by the nature of all apodictic certainty), it was supposed that the fundamental principles of mathematics also rested on the authority of the same principle of contradiction. This, however, was a mistake: for though a synthetical proposition may be understood according to the principle of contradiction, this can only be if another synthetical proposition is presupposed, from which the latter is deduced, but never by itself. First of all, we ought to observe, that mathematical propositions, properly so called, are always judgments *a priori*, and not empirical, because they carry along with them necessity, which can never be deduced from experience. If people should object to this, I am quite willing to confine my statement to pure mathematics, the very concept of which implies that it does not contain empirical, but only pure knowledge *a priori*.

At first sight one might suppose indeed that the proposition $7+5=12$ is merely analytical, following, according to the principle of contradiction, from the concept of a sum of 7 and 5. But, if we look more

closely, we shall find that the concept of the sum of 7 and 5 contains nothing beyond the union of both sums into one, whereby nothing is told us as to what this single number may be which combines both. We by no means arrive at a concept of Twelve, by thinking that union of Seven and Five; and we may analyse our concept of such a possible sum as long as we will, still we shall never discover in it the concept of Twelve. We must go beyond these concepts, and call in the assistance of the intuition corresponding to one of the two, for instance, our five fingers, or, as Segner does in his arithmetic, five points, and so by degrees add the units of the Five, given in intuition, to the concept of the Seven. For I first take the number 7, and taking the intuition of the fingers of my hand, in order to form with it the concept of the 5, I gradually add the units, which I before took together, to make up the number 5, by means of the image of my hand, to the number 7, and I thus see the number 12 arising before me. That 7 should be added to 5 was no doubt implied in my concept of a sum $7 + 5$, but not that that sum should be equal to 12. An arithmetical proposition is, therefore, always synthetical, which is seen more easily still by taking larger numbers, where we clearly perceive that, turn and twist our conceptions as we may, we could never, by means of the mere analysis of our concepts and without the help of intuition, arrive at the sum that is wanted.

Nor is any proposition of pure geometry analytical. That the straight line between two points is the shortest, is a synthetical proposition. For my concept of *straight* contains nothing of magnitude (quantity), but a quality only. The concept of the *shortest* is, therefore, purely adventitious, and cannot be deduced

from the concept of the straight line by any analysis whatsoever. The aid of intuition, therefore, must be called in, by which alone the synthesis is possible.

[It is true that some few propositions, presupposed by the geometrician, are really analytical, and depend on the principle of contradiction: but then they serve only, like identical propositions, to form the chain of the method, and not as principles. Such are the propositions, $a = a$, the whole is equal to itself, or $(a+b) > a$, that the whole is greater than its part. And even these, though they are valid according to mere concepts, are only admitted in mathematics, because they can be represented in intuition[1].] What often makes us believe that the predicate of such apodictic judgments is contained in our concept, and the judgment therefore analytical, is merely the ambiguous character of the expression. We are told that we *ought* to join in thought a certain predicate to a given concept, and this necessity is inherent in the concepts themselves. But the question is not what we *ought* to join to the given concept, but what we *really think* in it, though confusedly only, and then it becomes clear that the predicate is no doubt inherent in those concepts by necessity, not, however, as thought in the concept itself, but by means of an intuition, which must be added to the concept.

2. *Natural science (physica) contains synthetical judgments* a priori *as principles.* I shall adduce, as examples, a few propositions only, such as, that in all changes of the material world the quantity of matter always remains unchanged: or that in all

[1] This paragraph from *It is true* to *intuition* seems to have been a marginal note, as shown by Dr. Vaihinger. See Translator's Preface, p. lii.

communication of motion, action and reaction must always equal each other. It is clear not only that both convey necessity, and that, therefore, their origin is *a priori*, but also that they are synthetical propositions. For in the concept of matter I do not conceive its permanency, but only its presence in the space which it fills. I therefore go beyond the concept of matter in order to join something to it *a priori*, which I did not before conceive *in it*. The proposition is, therefore, not analytical, but synthetical, and yet *a priori*, and the same applies to the other propositions of the pure part of natural science.

3. *Metaphysic*, even if we look upon it as hitherto a tentative science only, which, however, is indispensable to us, owing to the very nature of human reason, is meant to *contain synthetical knowledge a priori*. Its object is not at all merely to analyse such concepts as we make to ourselves of things *a priori*, and thus to explain them analytically, but to expand our knowledge *a priori*. This we can only do by means of concepts which add something to a given concept that was not contained in it; nay, we even attempt, by means of synthetical judgments *a priori*, to go so far beyond a given concept that experience itself cannot follow us: as, for instance, in the proposition that the world must have a first beginning. Thus, according at least to its intentions, metaphysic consists merely of synthetical propositions *a priori*.

VI.

The general Problem of pure Reason.

Much is gained if we are able to bring a number of investigations under the formula of one single problem. For we thus not only facilitate our own

work by defining it accurately, but enable also everybody else who likes to examine it to form a judgment, whether we have really done justice to our purpose or not. Now the real problem of pure reason is contained in the question, *How are synthetical judgments* a priori *possible?*

That metaphysic has hitherto remained in so vacillating a state of ignorance and contradiction is entirely due to people not having thought sooner of this problem, or perhaps even of a distinction between *analytical* and *synthetical* judgments. The solution of this problem, or a sufficient proof that a possibility which is to be explained does in reality not exist at all, is the question of life or death to metaphysic. *David Hume,* who among all philosophers approached nearest to that problem, though he was far from conceiving it with sufficient definiteness and universality, confining his attention only to the synthetical proposition of the connection of an effect with its causes (principium causalitatis), arrived at the conclusion that such a proposition *a priori* is entirely impossible. According to his conclusions, everything which we call metaphysic would turn out to be a mere delusion of reason, fancying that it knows by itself what in reality is only borrowed from experience, and has assumed by mere habit the appearance of necessity. If he had grasped our problem in all its universality, he would never have thought of an assertion which destroys all pure philosophy, because he would have perceived that, according to his argument, no pure mathematical science was possible either, on account of its certainly containing synthetical propositions *a priori*; and from such an assertion his good sense would probably have saved him.

On the solution of our problem depends, at the same time, the possibility of the pure employment of reason, in establishing and carrying out all sciences which contain a theoretical knowledge *a priori* of objects, i.e. the answer to the questions

How is pure mathematical science possible?

How is pure natural science possible?

As these sciences really exist, it is quite proper to ask, *How* they are possible? for *that* they must be possible, is proved by their reality[1].

But as to *metaphysic*, the bad progress which it has hitherto made, and the impossibility of asserting of any of the metaphysical systems yet brought forward that it really exists, so far as its essential aim is concerned, must fill every one with doubts as to its possibility.

Yet, in a certain sense, this *kind of knowledge* also must be looked upon as given, and though not as a science, yet as a natural disposition (metaphysica naturalis) metaphysic is real. For human reason, without being moved merely by the conceit of omniscience, advances irresistibly, and urged on by its own need, to questions such as cannot be answered by any empirical employment of reason, or by principles thence derived, so that we may really say, that all men, as soon as their reason became ripe for speculation, have at all times possessed some kind of metaphysic, and will

[1] One might doubt this with regard to pure natural science; but one has only to consider the different propositions which stand at the beginning of real (empirical) physical science, those, for example, relating to the permanence of the same quantity of matter to the vis inertiæ, the equality of action and reaction, &c., in order to become convinced that they constitute a physcia pura, or rationalis, which well deserves to stand by itself as an independent science, in its whole extent, whether narrow or wide.

always continue to possess it. And now it will also have to answer the question,

How is metaphysic possible, as a natural disposition? that is, how does the nature of universal human reason give rise to questions which pure reason proposes to itself, and which it is urged on by its own need to answer as well as it can?

As, however, all attempts which have hitherto been made at answering these natural questions (for instance, whether the world has a beginning, or exists from all eternity), have always led to inevitable contradictions, we cannot rest satisfied with the mere natural disposition to metaphysic, that is, with the pure faculty of reason itself, from which some kind of metaphysic (whatever it may be) always arises; but it must be possible to arrive with it at some certainty as to our either knowing or not knowing its objects; that is, we must either decide that we can judge of the objects of these questions, and of the power or want of power of reason, in deciding anything upon them,—therefore that we can either enlarge our pure reason with certainty, or that we have to impose on it fixed and firm limits. This last question, which arises out of the former more general problem, would properly assume this form,

How is metaphysic possible, as a science?

The critique of reason leads, therefore, necessarily, to true science, while its dogmatical use, without criticism, lands us in groundless assertions, to which others, equally specious, can always be opposed, that is, in *scepticism.*

Nor need this science be very formidable by its great prolixity, for it has not to deal with the objects of reason, the variety of which is infinite, but with reason only, and with problems, suggested by reason

and placed before it, not by the nature of things, which are different from it, but by its own nature; so that, if reason has only first completely understood its own power, with reference to objects given to it in experience, it will have no difficulty in determining completely and safely the extent and limits of its attempted application beyond the limits of all experience.

We may and must therefore regard all attempts which have hitherto been made at building up a metaphysic dogmatically, as *non-avenu*. For the mere analysis of the concepts that dwell in our reason *a priori*, which has been attempted in one or other of those metaphysical systems, is by no means the aim, but only a preparation for true metaphysic, namely, the answer to the question, how we can enlarge our knowledge *a priori* synthetically; nay, it is utterly useless for that purpose, because it only shows what is contained in those concepts, but not by what process *a priori* we arrive at them, in order thus to determine the validity of their employment with reference to all objects of knowledge in general. Nor does it require much self-denial to give up these pretensions, considering that the undeniable and, in the dogmatic procedure, inevitable contradictions of reason with itself, have long deprived every system of metaphysic of all authority. More firmness will be required in order not to be deterred by difficulties from within and resistance from without, from trying to advance a science, indispensable to human reason, (a science of which we may lop off every branch, but will never be able to destroy the root,) by a treatment entirely opposed to all former treatments, which promises, at last, to ensure the successful and fruitful growth of metaphysical science.

SUPPLEMENT VII. [See vol. ii. p. 11]

STILL less ought we to expect here a criticism on the books and systems treating of pure reason, but only on the faculty of pure reason itself. It is only if we are in possession of this, that we possess a safe criterion for estimating the philosophical value of old and new works on this subject. Otherwise, an unqualified historian and judge does nothing but criticise the groundless assertions of others by means of his own, which are equally groundless.

4. SPACE is represented as an infinite given quantity. Now it is quite true that every concept is to be thought as a representation, which is contained in an infinite number of different possible representations (as their common characteristic), and therefore comprehends them: but no concept, as such, can be thought, as if it contained in itself an infinite number of representations. Nevertheless, space is so thought, (for all parts of space exist simultaneously ad infinitum). Consequently, the original representation of space is an *intuition a priori*, and not a concept.

§ 3.

Transcendental Exposition of the concept of space.

I understand by transcendental *exposition* (*Erörterung*), the explanation of a concept, as of a principle by which the possibility of other synthetical kinds of knowledge *a priori* can be understood. For this purpose it is necessary, 1. That such kinds of knowledge really do flow from the given concept. 2. That they are possible only under the presupposition of a given mode of explanation of such concept.

Geometry is a science which determines the properties of space synthetically, and yet *a priori*. What then must be the representation of space, to render such a knowledge of it possible? It must be originally intuitive; for it is impossible from a mere concept to deduce propositions which go beyond that

concept, as we do in geometry (Introduction V. See Supp. VI). That intuition, however, must be *a priori*, that is, it must exist within us before any perception of the object, and must therefore be pure, not empirical intuition. For all geometrical propositions are apodictic, that is, connected with the consciousness of their necessity, as for instance the proposition, that space has only three dimensions; and such propositions cannot be empirical judgments, nor conclusions from them (Introduction II. See Suppl. IV. II).

How then can an external intuition dwell in the mind anterior to the objects themselves, and in which the concept of objects can be determined *a priori*? Evidently not otherwise than so far as it has its seat in the subject only, as the formal condition under which the subject is affected by the objects, in receiving an *immediate representation*, that is, *intuition* of them; therefore as a form of the external *sense* in general.

It is therefore by our explanation only that the *possibility* of *geometry* as a synthetical science *a priori* becomes intelligible. Every other explanation, which fails to account for this possibility, can best be distinguished from our own by that criterion, although it may seem to have some similarity with it.

SUPPLEMENT IX. [See vol. ii. p. 25]

With the exception of space there is no other subjective representation, referring to something external, that could be called *a priori* objective. For from none of them can we derive synthetical propositions *a priori*, as we can from the intuition in space §. 3. (See Suppl. VIII). Strictly speaking, therefore, they can claim no ideality at all, though they agree with the representation of space in this, that they belong only to the subjective nature of sensibility, for instance, of sight, of hearing, and feeling, through the sensations of colours, sounds, and heat. All these, however, being sensations only, and not intuitions, do not help us by themselves to know any object, least of all *a priori*.

SUPPLEMENT X. [See vol. ii, p. 28]

§ 5.

Transcendental Exposition of the concept of time.

I CAN here refer to No. III. p. 27, where, for the sake of brevity, I have placed what is properly transcendental under the head of metaphysical exposition. Here I only add that the concept of change, and with it the concept of motion (as change of place), is possible only through and in the representation of time; and that, if this representation were not intuitive (internal) *a priori*, no concept, whatever it be, could make us understand the possibility of a change, that is, of a connection of contradictorily opposed predicates (for instance, the being and not-being of one and the same thing in one and the same place) in one and the same object. It is only in time that both contradictorily opposed determinations can be met with in the same object, that is, one after the other. Our concept of time, therefore, exhibits the possibility of as many synthetical cognitions *a priori* as are found in the general doctrine of motion, which is very rich in them.

SUPPLEMENT XI. [See vol. ii, p. 43]

II. As a confirmation of this theory of the ideality both of the external and of the internal sense, and therefore of all objects of the senses as mere phenomena, we may particularly remark, that everything in our knowledge which belongs to intuition (excluding therefore the feelings of pain and pleasure, and the will, which are no knowledge at all), contains nothing but mere relations, namely, of the places in an intuition (extension), change of places (motion), and laws, according to which that change is determined (moving forces). Nothing is told us thereby as to what is present in the place, or what, besides the change of place, is active in the things. A thing by itself however cannot be known by mere relations, and we may, therefore, fairly conclude that, as the external sense gives us nothing but representations of relations, that sense can contain in its representation only the relation of an object to the subject, and not what is inside the object by itself. The same applies to internal intuition. Not only do the representations of the *external senses* constitute its proper material with which we fill our mind, but time, in which these representations are placed, and which precedes even our consciousness of them in experience, nay, forms the formal condition of the manner in which we place them in the mind, contains itself relations of succession, co-existence, and that which must be co-existent with succession, namely, the permanent. Now that which, as a representation, can

precede every act of thinking something, is the intuition: and, if it contains nothing but relations, then the form of intuition. As this represents nothing except what is being placed in the mind, it can itself be the manner only in which the mind, through its own activity, that is, by this placing of its representation, is affected by itself, in other words, an internal sense with respect to its form. Whatever is represented by a sense is so far always phenomenal, and we should therefore have either to admit no internal sense at all, or the subject, which is its object, could be represented by it as phenomenal only, and not, as it might judge of itself, if its intuition were spontaneous only, that is, if it were intellectual. The difficulty here lies wholly in this, how a subject can have an internal intuition of itself: but this difficulty is common to every theory. The consciousness of self (apperception) is the simple representation of the ego, and if by it alone all the manifold (representations) in the subject were given *spontaneously*, the inner intuition would be intellectual. In man this consciousness requires internal perception of the manifold, which is previously given in the subject, and the manner in which this is given in the mind without spontaneity, must, on account of this difference, be called sensibility. If the faculty of self-consciousness is to seek for, that is, to apprehend, what lies in the mind, it must affect it, and can thus only produce an intuition of self. The form of this, which lay antecedently in the mind, determines the manner in which the manifold exists together in the mind, namely, in the representation of time. The intuition of self, therefore, is not, as if it could represent itself immediately and as spontaneously and independently active, but according to the manner in

which it is internally affected, consequently as it appears to itself, not as it is.

III. If I say that the intuition of external objects and the self-intuition of the mind, represent both (viz. the objects and the mind) in space and time, as they affect our senses, that is, as they appear, I do not mean, that these objects are mere *illusion*. For the objects, as phenomena, nay, even the properties which we ascribe to them, are always looked upon as something really given: and all we do is, that, as their quality depends only on the manner of intuition on the part of the subject in relation to a given object, we distinguish the object, as *phenomenon*, from itself, as an object by itself. Thus, if I assert that the quality of space and time, according to which, as a condition of their existence, I accept both external objects and my own soul, lies in my manner of intuition and not in these objects by themselves, I do not mean to say that bodies *seem* only to exist outside me, or that my soul *seems* only to be given in my self-consciousness. It would be my own fault, if I changed that, which I ought to count as phenomenal, into mere illusion[1].

[1] Phenomenal predicates can be attributed to the object in its relation to our sense: as for instance to the rose its red colour, and its scent. But what is merely phenomenal can never be attributed to an object as a predicate, for the simple reason that the phenomenal attributes to the object by itself something which belongs to it only in its relation to the senses, or to a subject in general: as for instance the two handles, which were formerly attributed to Saturn. That which is never to be found in the object itself, but always in its relation to a subject, and is inseparable from its representation by a subject, is phenomenal, and the predicates of space and time are therefore rightly attributed to objects of the senses, as such. In this there is no illusion. If, on the contrary, I were to attribute to the rose *by itself*, redness, handles to Saturn, and extension to all external objects, without restricting my judgment to the relation of these objects to a subject, we should have illusion.

This cannot happen, however, according to our principle of the ideality of all sensuous intuitions; on the contrary, it is only when we attribute *objective reality* to those forms of intuition, that everything is changed inevitably into mere *illusion*. For if we take space and time as properties that ought to exist in things by themselves, in order to make them possible, and then survey the absurdities in which we should be involved in having to admit that two infinite things, which are not substances, nor something inherent in substances, but nevertheless must be something existing, nay, the necessary condition of the existence of all things, would remain, even if all existing things were removed, we really cannot blame the good Bishop Berkeley for degrading bodies to mere illusion. Nay, it would follow that even our own existence, which would thus be made dependent on the independent reality of such a non-entity as time, must become a mere illusion, an absurdity which hitherto no one has been guilty of.

IV. In natural theology, where we think of an object which not only can never be an object of intuition to us, but which even to itself can never be an object of *sensuous* intuition, great care is taken to remove all conditions of space and time from its intuition (for all its knowledge must be intuitive, and not *thought*, which always involves limitation). But how are we justified in doing this, when we have first made space and time forms of things by themselves, such as would remain as conditions of the existence of things *a priori*, even if the things themselves had been removed? If conditions of all existence, they would also be conditions of the existence of God. If we do not wish to change space and time into objective forms of all things, nothing remains but

to accept them as subjective forms of our external as well as internal intuition, which is called sensuous, for the very reason that it is not originally spontaneous, that is such, that it could itself give us the existence of the objects of intuition (such an intuition, so far as we can understand, can belong to the First Being only), but dependent on the existence of objects, and therefore possible only, if the faculty of representation in the subject is affected by them.

It is not necessary, moreover, that we should limit this intuition in space and time to the sensibility of man; it is quite possible that all finite thinking beings must necessarily agree with us on this point (though we cannot decide this). On account of this universal character, however, it does not cease to be sensibility, for it always is, and remains derivative (intuitus derivativus), not original (intuitus originarius), and therefore not intellectual intuition. For the reason mentioned before, the latter intuition seems only to belong to the First Being, and never to one which is dependent, both in its existence and its intuition, (which intuition determines its existence with reference to given objects). This latter remark, however, must only be taken as an illustration of our æsthetic theory, and not as a proof.

Conclusion of the Transcendental Æsthetic.

Here, then, we have one of the requisites for the solution of the general problem of transcendental philosophy, *How are synthetical propositions* a priori *possible?* namely, pure intuitions *a priori*, space and time. In them we find, if in a judgment *a priori* we want to go beyond a given concept, that which

can be discovered *a priori*, not in the concept, but in the intuition corresponding to it, and can be connected with it synthetically. For this very reason, however, such judgments can never go beyond the objects of the senses, but are valid only for objects of possible experience.

SUPPLEMENT XII. [See vol. ii, p. 74]

§ 11.

THIS table of categories suggests some interesting considerations, which possibly may have important consequences with regard to the scientific form of all knowledge of reason. For it is clear that such a table will be extremely useful, nay, indispensable, in the theoretical part of philosophy, in order to trace the *complete plan of a whole science*, so far as it rests on concepts *a priori*, and to divide it mathematically *according to fixed principles*, because that table contains all elementary concepts of the understanding in their completeness, nay, even the form of a system of them in the human understanding, and indicates therefore all the *momenta* of a projected speculative science, nay, even their *order*. Of this I have given an example elsewhere[1]. Here follow some of the considerations.

The first is, that this table, which contains four classes of the concepts of the understanding, may, in the first instance, be divided into two sections, the former of which refers to objects of intuition (pure, as well as empirical), the latter to the existence of those objects (either in their relation to each other, or to the understanding).

The first section I shall call that of the *mathematical*, the second, that of the *dynamical* categories. The first section has no correlates, which are met with in the second section only. Must not this

[1] Metaphysical Elements of Natural Science.

difference have some ground in the nature of the understanding?

Our second remark is, that in every class there is the same number of categories, namely three, which again makes us ponder, because generally all division *a priori* by means of concepts must be dichotomy. It should be remarked also, that the third category always arises from the combination of the second with the first. Thus *totality* is nothing but plurality considered as unity; *limitation* nothing but reality connected with negation; *community* is the causality of a substance as determining another reciprocally; lastly, *necessity*, the existence which is given by possibility itself. It must not be supposed, however, that therefore the third category is only a derivative, and not a primary concept of the pure understanding. For the joining of the first and second concepts, in order to produce the third, requires an independent act of the understanding, which is not identical with the act that produces the first and second concepts. Thus the concept of a number (which belongs to the category of totality), is not always possible when we have the concepts of plurality and unity (for instance, in the concept of the infinite); nor can we understand by simply combining the concept of a *cause* and that of a *substance*, the *influence*, that is, how a substance can become the cause of something in another substance. This shows that a separate act of the understanding is here required, and the same applies to all the rest.

Third observation. With regard to one category, namely, that of *community*, which is found in the third class, its accordance with the form of a disjunctive judgment, which corresponds to it in the

table of logical functions, is not so evident as elsewhere.

In order to become quite certain of that accordance, we must remark that in all disjunctive judgments their sphere (that is, all that is contained in them) is represented as a whole, divided into parts (the subordinate concepts), and that, as one of them cannot be contained under the other, they are conceived as co-ordinate, not as subordinate, determining each other, not in one direction only, as in a series, but reciprocally, as in an aggregate (if one member of the division is given, all the rest are excluded, and *vice versa*).

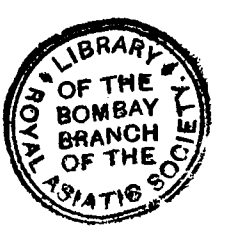
A similar connection is conceived in a *whole of things*, in which one, as effect, is not subordinated to another as the cause of its existence, but is co-ordinated with it, simultaneously and reciprocally, as cause of the determination of the other (as, for instance, in a body of which the parts reciprocally attract and repel each other). This is a kind of connection totally different from that which exists in a mere relation of cause to effect (of ground to consequence), for here the consequence does not reciprocally determine the ground again, nor (as in the case of the Creator and the creation) constitute with it a whole. The process of the understanding, in representing to itself the sphere of a divided concept, is the same as that by which it thinks a thing as divisible: and in the same manner in which, in the former, the members of a division exclude each other, and are yet connected in one sphere, the understanding represents to itself the parts of the latter as existing (as substances), each independent of the rest, and yet united in a whole.

§ 12.

In the transcendental philosophy of the ancients there is another chapter containing concepts of the understanding which, though they are not counted among the categories, are yet considered by them as concepts *a priori* of objects. If so, they would increase the number of the categories, which cannot be. They are set forth in the famous proposition of the Schoolmen, 'quodlibet ens est unum, verum, bonum.' Now although the inferences to be drawn from this principle (yielding nothing but tautological propositions) were very meagre, so that modern metaphysicians mention it almost by courtesy only, a thought which has maintained itself so long, however empty it may seem, deserves an investigation with regard to its origin, nay, leads us to suspect that it may have its foundation in some rule of the understanding which, as often happens, has only been wrongly interpreted. What are supposed to be transcendental predicates of *things*, are nothing but logical requirements and criteria of all *knowledge* of *things* in general, whereby that knowledge is founded on the categories of quantity, namely, *unity*, *plurality*, and *totality*. Only, instead of taking them as materially belonging to the possibility of things by themselves, they (the predicates, or rather those who employed them) used them, in fact, in their formal meaning only, as forming a logical requisite for every kind of knowledge, and yet incautiously made these criteria of thought to be properties of the things by themselves. In every cognition of an object there is *unity* of concept, which may be called *qualitative unity*, so far as we think by it only the unity in the comprehension of the manifold material of our know-

ledge: as, for instance, the unity of the subject in a play, or a speech, or a fable. Secondly, there is *truth*, in respect to the deductions from it. The more true deductions can be made from a given concept, the more criteria are there of its objective reality. This might be called the *qualitative plurality* of criteria, which belong to a concept as their common ground (but are not conceived in it), as quantity. Thirdly, there is *completeness*, which consists in this, that the plurality together leads back to the unity of the concept, according completely with this and with no other concept, which may be called the *qualitative completeness* (totality). This shows that these logical criteria of the possibility of knowledge in general do nothing but change the three categories of quantity, in which the unity in the production of the quantum must throughout be taken as *homogeneous*, for the purpose of connecting *heterogeneous* elements of knowledge also in one consciousness, by means of the quality of the cognition as the principle of the connection. Thus the criterion of the possibility of a concept (but not of its object) is the definition of it, in which the *unity* of the concept, the *truth* of all that may be immediately deduced from it, and lastly, the *completeness* of what has been deduced from it, supply all that is necessary for the constitution of the whole concept. In the same manner the *criterion of an hypothesis* consists, first, in the intelligibility of the *ground* which has been admitted *for the sake of explanation*, or of its *unity* (without any auxiliary hypothesis); secondly, in the *truth* of the consequences to be deduced from it (their accordance with themselves and with experience); and lastly, in the *completeness* of the ground admitted for the explanation of these consequences, which point back to

neither more nor less than what was admitted in the hypothesis, and agree in giving us again, analytically *a posteriori*, what had been thought synthetically *a priori*. The concepts of unity, truth, and perfection do not supplement the transcendental table of the categories, as if it were imperfect, but they serve only, after the relation of these concepts to their objects has been entirely set aside, to bring their employment under general logical rules, for the agreement of knowledge with itself.


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SUPPLEMENT XIII. [See vol. ii, p. 84]

LOCKE, for want of this reflection, and because he met with pure concepts of the understanding in experience, derived them also from experience, and yet acted so *inconsistently* that he attempted to use them for knowledge which far exceeds all limits of experience. David Hume saw that, in order to be able to do this, these concepts ought to have their origin *a priori*; but as he could not explain how it was possible that the understanding should be constrained to think concepts, which by themselves are not united in the understanding, as necessarily united in the object, and never thought that possibly the understanding might itself, through these concepts, be the author of that experience in which its objects are found, he was driven by necessity to derive them from experience (namely, from a subjective necessity, produced by frequent association in experience, which at last is wrongly supposed to be *objective*, that is, from habit). He acted, however, very consistently, by declaring it to be impossible to go with these concepts, and with the principles arising from them, beyond the limits of experience. This empirical deduction, which was adopted by both philosophers, cannot be reconciled with the reality of our scientific knowledge *a priori*, namely, pure *mathematics* and *general natural science*, and is therefore refuted by facts. The former of these two celebrated men opened a wide door to *fantastic extravagance*, because reason, if it has once established such pretensions,

can no longer be checked by vague praises of moderation; the other, thinking that he had once discovered so general an illusion of our faculty of knowledge, which had formerly been accepted as reason, gave himself over entirely to *scepticism*. We now intend to make the experiment whether it is not possible to conduct reason safely between these two rocks, to assign to her definite limits, and yet to keep open for her the proper field for all her activities?

I shall merely premise an *explanation* of what I mean by the *categories*. They are concepts of an object in general by which its intuition is *defined* through one of the *logical functions* in judgments. Thus the function of the *categorical* judgment was that of the relation of the subject to the predicate; for instance, all bodies are divisible. Here, however, with reference to the pure logical function of the understanding, it remained undetermined to which of the two concepts the function of the subject, or the predicate, was to be assigned. For we could also say, some divisible is body. But by bringing the concept of body under the category of substance, it is determined that its empirical intuition in experience must always be considered as subject and never as predicate only. The same applies to all other categories.

SUPPLEMENT XIV. [See vol. ii, p. 84]

OF THE DEDUCTION OF THE PURE CONCEPTS OF THE UNDERSTANDING.

Second Section.

Transcendental deduction of the pure Concepts of the Understanding.

§ 15.

Of the possibility of connecting (conjunctio) in general.

THE manifold of representations may be given in an intuition which is purely sensuous, that is, nothing but receptivity, and the form of that intuition may lie *a priori* in our faculty of representation, without being anything but the manner in which a subject is affected. But the connection (conjunctio) of anything manifold can never enter into us through the senses, and cannot be contained, therefore, already in the pure form of sensuous intuition, for it is a spontaneous act of the power of representation; and as, in order to distinguish this from sensibility, we must call it understanding, we see that all connecting, whether we are conscious of it or not, and whether we connect the manifold of intuition or several concepts together, and again, whether that intuition be sensuous or not sensuous, is an act of the understanding. This act we shall call by the general name of *synthesis*, in order to show that we cannot represent to ourselves anything as connected in the object, without having previously

connected it ourselves, and that of all representations *connection* is the only one which cannot be given through the objects, but must be carried out by the subject itself, because it is an act of its spontaneity. It can be easily perceived that this act must be originally one and the same for every kind of connection, and that its dissolution, that is, the *analysis*, which seems to be its opposite, does always presuppose it. For where the understanding has not previously connected, there is nothing for it to disconnect, because, as connected; it could only be given by the understanding through the faculty of representation.

But the concept of connection includes, besides the concept of the manifold and the synthesis of it, the concept of the unity of the manifold also. Connection is representation of the *synthetical* unity of the manifold[1].

The representation of that unity cannot therefore be the result of the connection; on the contrary, the concept of the connection becomes first possible by the representation of unity being added to the representation of the manifold. And this unity, which precedes *a priori* all concepts of connection, must not be mistaken for that category of unity of which we spoke on p. 68; for all categories depend on logical functions in judgments, and in these we have already connection, and therefore unity of given concepts. The category, therefore, presupposes connection, and we must consequently look still higher for this unity

[1] Whether the representations themselves are identical, and whether therefore one can be thought analytically by the other, is a matter of no consequence here. The *consciousness* of the one has always to be distinguished from the consciousness of the other, so far as the manifold is concerned; and everything here depends on the synthesis only of this (possible) consciousness.

as qualitative (see Suppl. XII. § 12), in that, namely, which itself contains the ground for the unity of different concepts in judgment, and therefore of the very possibility of the understanding in its logical employment.

§ 16.

The original synthetical unity of Apperception.

It must be *possible* that the *I think* should accompany all my representations: for otherwise something would be represented within me that could not be thought, in other words, the representation would either be impossible or nothing, at least so far as I am concerned. That representation which can be given before all thought, is called *intuition*, and all the manifold of intuition has therefore a necessary relation to the *I think* in the same subject in which that manifold of intuition is found. That representation, however (intuition), is an act of *spontaneity*, that is, it cannot be considered as belonging to sensibility. I call it *pure apperception*, in order to distinguish it from empirical apperception, or *original apperception* also, because it is that self-consciousness which by producing the representation, *I think*, which must accompany all others, and is one and the same in every act of consciousness, cannot itself be accompanied by any other. I also call the unity of it the transcendental unity of self-consciousness, in order to indicate that it contains the possibility of knowledge *a priori*. For the manifold representations in any given intuition would not all be in my representations, if they did not all belong to one self-consciousness. What I mean is that, as my representations (even though I am not conscious of them as such), they must be in accordance with that condition, under

which alone they can stand together in one common self-consciousness, because otherwise they would not all belong to me. Much may be deduced from this original connection.

Thus the unbroken identity of apperception of the manifold that is given in intuition contains a synthesis of representations, and is possible only through the consciousness of that synthesis. The empirical consciousness, which accompanies various representations, is itself various and disunited, and without reference to the identity of the subject. Such a relation takes place, not by my simply accompanying every relation with consciousness, but by my *adding* one to the other and being conscious of that act of adding, that is, of that synthesis. Only because I am able to connect the manifold of given representations in *one consciousness*, is it possible for me to represent to myself the *identity* of the *consciousness* in these *representations*, that is, only under the supposition of some synthetical unity of apperception does the analytical unity of apperception become possible [1].

[1] This analytical unity of consciousness belongs to all general concepts, as such. If, for instance, I think *red* in general, I represent to myself a property, which (as a characteristic mark) may be found in something, or can be connected with other representations; that is to say, only under a presupposed possible synthetical unity can I represent to myself the analytical. A representation which is to be thought as common to *different* representations, is looked upon as belonging to such as possess, besides it, something *different*. It must therefore have been thought in synthetical unity with other (though only possible) representations, before I can think in it that analytical unity of consciousness which makes it a conceptus communis. The synthetical unity of apperception is, therefore, the highest point with which all employment of the understanding, and even the whole of logic, and afterwards the whole of transcendental philosophy, must be connected; ay, that faculty is the understanding itself.

The thought that the representations given in intuition belong all of them to me, is therefore the same as that I connect them in one self-consciousness, or am able at least to do so; and though this is not yet the *consciousness* of the *synthesis* of representations, it nevertheless presupposes the possibility of the latter. In other words, it is only because I am able to comprehend the manifold of representations in one consciousness, that I call them altogether my representations, for otherwise, I should have as manifold and various a self as I have representations of which I am conscious. The synthetical unity of the manifold of intuitions as given *a priori* is therefore the ground also of the identity of that apperception itself which precedes *a priori* all definite thought. Connection, however, does never lie in the objects, and cannot be borrowed from them by perception, and thus be taken into the understanding, but it is always an act of the understanding, which itself is nothing but a faculty of connecting *a priori*, and of bringing the manifold of given representations under the unity of apperception, which is, in fact, the highest principle of all human knowledge.

It is true, no doubt, that this principle of the necessary unity of apperception is itself identical, and therefore an analytical proposition; but it shows, nevertheless, the necessity of a synthesis of the manifold which is given in intuition, and without which it would be impossible to think the unbroken identity of self-consciousness. For through the Ego, as a simple representation, nothing manifold is given; in the intuition, which is different from that, it can be given only, and then, by *connection*, be thought in one consciousness. An understanding in which, by its self-consciousness, all the manifold would be given at the

same time, would possess *intuition*; our understanding can do nothing but think, and must seek for its intuition in the senses. I am conscious, therefore, of the identical self with respect to the manifold of the representations, which are given to me in an intuition, because I call them, altogether, my representations, as constituting *one*. This means, that I am conscious of a necessary synthesis of them *a priori*, which is called the original synthetical unity of apperception under which all representations given to me must stand, but have to be brought there, first, by means of a synthesis.

§ 17.

The principle of the synthetical unity of Apperception is the highest principle of all employment of the Understanding.

The highest principle of the possibility of all intuition, in relation to sensibility, was, according to the transcendental Æsthetic, that all the manifold in it should be subject to the formal conditions of space and time. The highest principle of the same possibility in relation to the understanding is, that all the manifold in intuition must be subject to the conditions of the original synthetical unity of apperception[1].

[1] Space and time, and all portions thereof, are *intuitions*, and consequently single representations with the manifold for their content. (See the Transcendental Æsthetic.) They are not, therefore, mere concepts, through which the same consciousness, as existing in many representations, but through which many representations, as contained in one, and in its consciousness (therefore as compounded) are brought to us; thus representing the unity of

All the manifold representations of intuition, so far as they are *given* us, are subject to the former, so far as they must admit of being connected in one consciousness, to the latter; and without that nothing can be thought or known, because the given representations would not share the act of apperception (I think) in common, and could not be comprehended in one self-consciousness.

The *understanding* in its most general sense is the faculty of *cognitions*. These consist in a definite relation of given representations to an object; and an *object* is that in the concept of which the manifold of a given intuition is *connected*. All such connection of representations requires of course the unity of the consciousness in the synthesis: consequently, the unity of consciousness is that which alone constitutes the relation of representations to an object, that is, their objective validity, and consequently their becoming cognitions, so that the very possibility of the understanding depends on it.

The first pure cognition of the understanding, therefore, on which all the rest of its employment is founded, and which at the same time is entirely independent of all conditions of sensuous intuition, is this very principle of the original synthetical unity of apperception. Space, the mere form of external sensuous intuition, is not yet cognition: it only supplies the manifold of intuition *a priori* for a possible cognition. In order to know anything in space, for instance, a line, I must *draw* it, and produce synthetically a certain connection of the manifold that is given, so that the unity of that act is at the same time the unity of the consciousness (in the concept

consciousness as *synthetical*, but yet as primitive. This character of *singleness* in them is practically of great importance (see § 25).

of a line), and is thus only known, for the first time, as an object (a determinate space). The synthetical unity of consciousness is, therefore, an objective condition of all knowledge; a condition, not necessary for myself only, in order to know an object, but one to which each intuition must be subject, in order to become an *object* for me, because the manifold could not become connected in one consciousness in any other way, and without such a synthesis.

No doubt, that proposition, as I said before, is itself analytical, though it makes synthetical unity a condition of all thought, for it really says no more than that all my representations in any given intuition must be subject to the condition under which alone I can ascribe them, as my representations, to the identical self, and therefore comprehend them, as synthetically connected, in one apperception through the general expression, *I think*.

And yet this need not be a principle for every possible understanding, but only for that which gives nothing manifold through its pure apperception in the representation, *I am*. An understanding which through its self-consciousness could give the manifold of intuition, and by whose representation the objects of that representation should at the same time exist, would not require a special act of the synthesis of the manifold for the unity of its consciousness, while the human understanding, which possesses the power of thought only, but not of intuition, requires such an act. To the human understanding that first principle is so indispensable that it really cannot form the least concept of any other possible understanding, whether it be intuitive by itself, or possessed of a sensuous intuition, different from that in space and time.

§ 18.

What is the objective unity of Self-consciousness?

The transcendental *unity* of apperception connects all the manifold given in an intuition into a concept of an object. It is therefore called *objective*, and must be distinguished from the *subjective unity* of consciousness, which is a form of the *internal sense*, by which the manifold of intuition is empirically given, to be thus connected. Whether I can become *empirically* conscious of the manifold, as either simultaneous or successive, depends on circumstances, or empirical conditions. The empirical unity of consciousness, therefore, through the association of representations, is itself phenomenal and wholly contingent, while the pure form of intuition in time, merely as general intuition containing the manifold that is given, is subject to the original unity of the consciousness, through the necessary relation only of the manifold of intuition to the one, *I think*,—that is, through the pure synthesis of the understanding, which forms the *a priori* ground of the empirical synthesis. That unity alone is, therefore, valid objectively; the empirical unity of apperception, which we do not consider here, and which is only derived from the former, under given conditions in concreto, has subjective validity only. One man connects the representation of a word with one thing, another with another, and the unity of consciousness, with regard to what is empirical, is not necessary nor universally valid with reference to that which is given.

§ 19.

The logical form of all Judgments consists in the objective unity of Apperception of the concepts contained therein.

I could never feel satisfied with the definition of a judgment in general, given by our logicians, who say that it is the representation of a relation between two concepts. Without disputing with them in this place as to the defect of that explanation, which may possibly apply to categorical, but not to hypothetical and disjunctive judgments (the latter containing, not a relation of concepts, but of judgments themselves), — though many tedious consequences have arisen from this mistake of logicians, — I must at least make this observation, that we are not told in what that *relation* consists[1].

But, if I examine more closely the relation of cognitions in every judgment, and distinguish it, as belonging to the understanding, from the relation according to the rules of reproductive imagination (which has subjective validity only), I find that a judgment is nothing but the mode of bringing given cognitions into the *objective* unity of apperception. This is what is intended by the copula *is*, which is meant to distinguish the objective unity of given

[1] The lengthy doctrine of the four syllogistic figures concerns categorical syllogisms only, and though it is really nothing but a trick for obtaining the appearance of more modes of concluding than that of the first figure, by secretly introducing immediate conclusions (consequentiæ immediatæ) among the premisses of a pure syllogism, this would hardly have secured its great success, had not its authors succeeded, at the same time, in establishing the exclusive authority of categorical judgments, as those to which all others must be referred. This, as we showed in § 9, p. 62, is wrong.

representations from the subjective. It indicates their relation to the original apperception, and their necessary *unity*, even though the judgment itself be empirical, and therefore contingent; as, for instance, bodies are heavy. By this I do not mean to say that these representations belong *necessarily* to each other, in the empirical intuition, but that they belong to each other by means of the *necessary unity* of apperception in the synthesis of intuitions, that is, according to the principles of the objective determination of all representations, so far as any cognition is to arise from them, these principles being all derived from the principle of the transcendental unity of apperception. Thus, and thus alone, does the relation become a *judgment*, that is, a relation that is valid objectively, and can thus be kept sufficiently distinct from the relation of the same representations, if it has subjective validity only, for instance, according to the laws of association. In the latter case, I could only say, that if I carry a body I feel the pressure of its weight, but not, that it, the body, is heavy, which is meant to say that these two representations are connected together, in the object, whatever the state of the subject may be, and not only in a perception, however often it may be repeated.

§ 20.

All sensuous Intuitions are subject to the categories as conditions under which alone their manifold contents can come together in one Consciousness.

The manifold which is given us in a sensuous intuition is necessarily subject to the original unity of apperception, because by it alone the unity of intu-

ition becomes possible (§ 7). That act of the understanding, however, by which the manifold of given representations (whether intuitions or concepts) is brought under one apperception, is the logical function of a judgment (§ 19). The manifold, therefore, so far as it is given in an empirical intuition, is *determined* with regard to one of the logical functions of judgment, whereby alone it can become consciousness. The *categories*, however, are nothing but these functions of judgment, so far as the manifold of a given intuition is determined with respect to them (§ 13, see p. 84). Therefore the manifold in any given intuition is naturally subject to the categories.

§ 21.

Note.

The manifold, contained in an intuition which I call my own, is represented through the synthesis of the understanding, as belonging to the necessary unity of self-consciousness, and this takes place through the category[1].

This category indicates, therefore, that the empirical consciousness of the manifold, given in any intuition, is subject to a pure self-consciousness *a priori*, in the same manner as the empirical intuition is subject to a pure sensuous intuition which likewise takes place *a priori*.

In the above proposition a beginning is made of a *deduction* of the pure concepts of the understanding. In this, as the categories arise in the understanding

[1] The proof of this rests on the represented unity of intuition, by which an object is given, and which always includes a synthesis of the manifold which is given for an intuition, and contains the relation of the latter to the unity of apperception.

only, *independent of all sensibility*, I ought not yet to take any account of the manner in which the manifold is given for an empirical intuition, but attend exclusively to the unity which, by means of the category, enters into the intuition through the understanding. In what follows (§ 26) we shall show, from the manner in which the empirical intuition is given in sensibility, that its unity is no other than that which is prescribed by the category, (according to § 20) to the manifold of any given intuition. Thus only, that is, by showing their validity *a priori* with respect to all objects of our senses, the purpose of our deduction will be fully attained.

There is one thing, however, of which, in the above demonstration, I could not make abstraction: namely, that the manifold for an intuition must be given antecedently to the synthesis of the understanding, and independently of it;—how, remains uncertain. For if I were to imagine an understanding, itself intuitive (for instance, a divine understanding, which should not represent to itself given objects, but produce them at once by his representation) the categories would have no meaning with respect to such cognition. They are merely rules for an understanding whose whole power consists in thinking, that is, in the act of bringing the synthesis of the manifold, which is given to it in intuition from elsewhere, to the unity of apperception; an undertaking which therefore knows nothing by itself, but connects only and arranges the material for cognition, that is, the intuition which must be given to it by the object. This peculiarity of our understanding of producing unity of apperception *a priori* by means of the categories only, and again by such and so many, cannot be further explained, any more than why we have these and no

other functions of judgment, and why time and space are the only forms of a possible intuition for us.

§ 22.

The category admits of no other employment for the cognition of Things, but its application to objects of Experience.

We have seen that to think an object is not the same as to know an object. In order to know an object, we must have the concept by which any object is thought (the category), and likewise the intuition by which it is given. If no corresponding intuition could be given to a concept, it would still be a thought, so far as its form is concerned: but it would be without an object, and no knowledge of anything would be possible by it, because, so far as I know, there would be nothing, and there could be nothing, to which my thought could be referred. Now the only possible intuition for us is sensuous (see Æsthetic); the thought of any object, therefore, by means of a pure concept of the understanding, can with us become knowledge only, if it is referred to objects of the senses. Sensuous intuition is either pure (space and time), or empirical, i.e. if it is an intuition of that which is represented immediately through sensation, as real in space and time. By means of pure intuition we can gain knowledge *a priori* of things as phenomena (in mathematics), but only so far as their form is concerned: but whether there are things which must be perceived, according to that form, remains unsettled. Mathematical concepts, by themselves, therefore, are not yet knowledge, except under the supposition that there are things which admit of being represented by us, according to the

form of that pure sensuous intuition only. Consequently, as things in *space* and *time* are only given as perceptions (as representations accompanied by sensations), that is, through empirical representations, the pure concepts of the understanding, even if applied to intuitions *a priori*, as in mathematics, give us knowledge in so far only as these pure intuitions, and therefore through them the concepts of the understanding also, can be applied to empirical intuitions. In the same manner the categories, by means of intuition, do not give us any knowledge of things, except under the supposition of their possible application to empirical *intuition*; they serve, in short, for the possibility of empirical *knowledge* only, which is called *experience*. From this it follows that the categories admit of no other employment for the cognition of things, except so far only as these are taken as objects of possible experience.

§ 23.

The foregoing proposition is of the greatest importance, for it determines the limits of the employment of the pure concepts of the understanding with reference to objects, in the same manner as the Transcendental Æsthetic determined the limits of the employment of the pure form of our sensuous intuition. Space and time are conditions of the possibility of how objects can be given to us, so far only as objects of the senses, therefore of experience, are concerned. Beyond these limits they represent nothing, for they belong only to the senses, and have no reality beyond them. Pure concepts of the understanding are free from this limitation, and extend to objects of intuition in general, whether that intuition be like our own or not, if only it is sensuous

and not intellectual. This further extension, however, of concepts beyond our sensuous intuition, is of no avail to us; for they are in that case empty concepts of objects, and the concepts do not even enable us to say, whether such objects be possible or not. They are mere forms of thought, without objective reality: because we have no intuition at hand to which the synthetical unity of apperception, which alone is contained in the concepts, could be applied, so that they might determine an object. Nothing can give them sense and meaning, except our sensuous and empirical meaning.

If, therefore, we assume an object of a non-sensuous intuition as given, we may, no doubt, determine it through all the predicates, which follow from the supposition that *nothing belonging to sensuous intuition belongs to it*, that, therefore, it is not extended, or not in space, that its duration is not time, that no change (succession of determinations in time) is to be met in it, &c. But we can hardly call this knowledge, if we only indicate how the intuition of an object *is not*, without being able to say what is contained in it, for, in that case, I have not represented the possibility of an object, corresponding to my pure concept of the understanding, because I could give no intuition corresponding to it, but could only say that our intuition did not apply to it. But what is the most important is this, that not even a single category could be applied to such a thing; as for instance, the concept of substance, that is, of something that can exist as a subject only, but never as a mere predicate. I should not know, therefore, whether there could be anything corresponding to such a determination of thought, unless empirical intuition supplied the case for its application. Of this more hereafter.

§ 24.

Of the application of the Categories to objects of the senses in general.

The pure concepts of the understanding refer, through the understanding, to objects of intuition, whether it be our own, or any other, if only sensuous intuition, but they are, for that very reason, mere *forms of thought*, by which no definite object can be known. The synthesis, or connection of the manifold in them, referred only to the unity of apperception, and became thus the ground of the possibility of knowledge *a priori*, so far as it rests on the understanding, and is therefore not only transcendental, but also purely intellectual. As there exists in us a certain form of sensuous intuition *a priori*, which rests on the receptivity of the faculty of representation (sensibility), the understanding, as spontaneity, is able to determine the internal sense through the manifold of given representations, according to the synthetical unity of apperception, and can thus think synthetical unity of the apperception of the manifold, in *sensuous intuition a priori*, as the condition to which all objects of our (human) intuition must necessarily be subject. Thus the categories, though pure forms of thought, receive objective reality, that is, application to objects which can be given to us in intuition, but as phenomena only; for it is with reference to them alone that we are capable of intuition *a priori*.

This *synthesis* of the manifold of sensuous intuition, which is possible and necessary *a priori*, may be called *figurative* (synthesis speciosa), in order to distinguish it from that which is thought in the mere category, with reference to the manifold of an intuition

in general, and is called intellectual synthesis (synthesis intellectualis). Both are transcendental, not only because they themselves are carried out *a priori*, but because they establish also the possibility of other knowledge *a priori*.

But this figurative synthesis, if it refers to the original synthetical unity of apperception only, that is, to that transcendental unity which is thought in the categories, must be called the transcendental synthesis of the faculty of imagination, in order thus to distinguish it from the purely intellectual synthesis. *Imagination* is the faculty of representing an object even *without its presence* in intuition. As all our intuition is sensuous, the faculty of imagination belongs, on account of the subjective condition under which alone it can give a corresponding intuition to the concepts of the understanding, to our *sensibility*. As however its synthesis is an act of spontaneity, determining, and not, like the senses, determinable only, and therefore able to determine *a priori* the senses, so far as their form is concerned, according to the unity of apperception, the faculty of imagination is, so far, a faculty of determining our sensibility *a priori*, so that the synthesis of the intuitions, according to the *categories*, must be the transcendental *synthesis of the faculty of imagination*. This is an effect, produced by the understanding on our sensibility, and the first application of it (and at the same time the ground of all others) to objects of an intuition possible to us. As figurative, it is distinguished from the intellectual synthesis, which takes place by the understanding only, without the aid of the faculty of imagination. In so far as imagination is spontaneity, I call it occasionally *productive* imagination: distinguishing it from the *reproductive*, which in its

synthesis is subject to empirical laws only, namely those of association, and which is of no help for the explanation of the possibility of knowledge *a priori*, belonging, therefore, to psychology, and not to transcendental philosophy.

* * * * *

This is the proper place for trying to account for the paradox, which must have struck everybody in our exposition of the form of the internal sense (§ 6, see p. 28); namely, how that sense represents to the consciousness even ourselves, not as we are by ourselves, but as we appear to ourselves, because we perceive ourselves only as we are *affected* internally. This seems to be contradictory, because we should thus be in a passive relation to ourselves; and for this reason the founders of the systems of psychology have preferred to represent the *internal* sense as identical with the faculty of *apperception*, while we have carefully distinguished the two.

What determines the internal sense is the understanding, and its original power of connecting the manifold of intuition, that is, of bringing it under one apperception, this being the very ground of the possibility of the understanding. As in us men the understanding is not itself an intuitive faculty, and could not, even if intuitions were given in our sensibility, take them into itself, in order to connect, as it were, the manifold of *its own* intuition, the synthesis of the understanding, if considered by itself alone, is nothing but the unity of action, of which it is conscious without sensibility also, but through which the understanding is able to determine that sensibility internally, with respect to the manifold which may be given to it according to the form of

its intuition. The understanding, therefore, exercises its activity, under the name of a *transcendental synthesis of the faculty of imagination*, on the passive subject to which it *belongs* as a faculty, and we are right in saying that the internal sense is affected by that activity. The apperception with its synthetical unity is so far from being identical with the internal sense, that, as the source of all synthesis, it rather applies, under the name of the categories, to the manifold of *intuitions in general*, that is, to objects before all sensuous intuition; while the internal sense, on the contrary, contains the mere form of intuition, but without any connection of the manifold in it, and therefore, as yet, no *definite* intuition, which becomes possible only through the consciousness of the determination of the internal sense by the transcendental act of the faculty of imagination (the synthetical influence of the understanding on the internal sense) which I have called the figurative synthesis.

This we can always perceive in ourselves. We cannot think a line without drawing it in thought; we cannot think a circle without describing it; we cannot represent, at all, the three dimensions of space, without placing, from the same point, three lines perpendicularly on each other; nay, we cannot even represent time, except by attending, during our *drawing* a straight line (which is meant to be the external figurative representation of time) to the act of the synthesis of the manifold only by which we successively determine the internal sense, and thereby to the succession of that determination in it. It is really motion, as the act of the subject (not as the determination of an object[1]), therefore the

[1] Motion of an *object* in space does not belong to a pure science,

synthesis of the manifold in space, (abstraction being made of space, and our attention fixed on the act only by which we determine the *internal sense*, according to its form) which first produces the very concept of succession. The understanding does not, therefore, *find* in it such a connection of the manifold, but *produces* it by *affecting* the internal sense. It may seem difficult to understand how the thinking Ego can be different from the Ego which sees or perceives itself (other modes of intuition being at least conceivable), and yet identical with the latter as the same subject, and how, therefore, I can say: I, as intelligence and *thinking* subject, know myself as an object *thought*, so far as being given to myself in intuition also, like other phenomena only, not as I am to the understanding, but as I appear to myself. In reality, however, this is neither more nor less difficult than how I can be, to myself, an object, and an object of intuition as well as of internal perceptions. But that this must really be so, can clearly be shown,—if only we admit space to be merely a pure form of the phenomena of the external senses,—by the fact that we cannot represent to ourselves time, which is no object of internal intuition, in any other way than under the image of a line which we draw, a mode of representation without which we could not realise the unity of its dimension; or again by this other fact that we must always derive the determination of the length of time, or of points

consequently not to geometry, because the fact that a thing is moveable cannot be known *a priori*, but from experience only. Motion, however, considered as *describing* a space, is a pure act of successive synthesis of the manifold in external intuition in general by means of productive imagination, and belongs, therefore, by right, not only to geometry, but even to transcendental philosophy.

of time, for all our internal perceptions, from that which is represented to us as changeable by external things, and have therefore to arrange the determinations of the internal sense as phenomena in time, in exactly the same way in which we arrange the determinations of the external senses in space. If, then, with regard to the latter, we admit that by them we know objects so far only as we are affected externally, we must also admit, with regard to the internal sense, that by it we only are, or perceive ourselves, as we are internally affected by ourselves, in other words, that with regard to internal intuition we know our own self as a phenomenon only, and not as it is by itself[1].

§ 25.

In the transcendental synthesis, however, of the manifold of representations in general, and therefore in the original synthetical unity of apperception, I am conscious of myself, neither as I appear to myself, nor as I am by myself, but only that I am. *This representation* is an act of *thought*, not of *intuition*. Now, in order to *know* ourselves, we require, besides the act of thinking, which brings the manifold of every possible intuition to the unity of apperception, a definite kind of intuition also by which that manifold is given, and thus, though my own existence is not phenomenal (much less a mere illu-

[1] I do not see how so much difficulty should be found in admitting that the internal sense is affected by ourselves. Every act of *attention* gives us an instance of it. In such an act the understanding always determines the internal sense, according to the connection which it thinks, to such an internal intuition as corresponds to the manifold in the synthesis of the understanding. How much the mind is commonly affected thereby anybody will be able to perceive in himself.

sion), yet the determination of my existence[1] can only take place according to the form of the internal sense, and in that special manner in which the manifold, which I connect, is given in the internal intuition. This shows that I have no *knowledge* of myself as I am, but only as I appear to myself. The consciousness of oneself is therefore very far from being a knowledge of oneself, in spite of all the categories which constitute the thinking of an *object in general*, by means of the connection of the manifold in an apperception. As for the knowledge of an object different from myself I require, besides the thinking of an object in general (in a category), an intuition also, to determine that general concept, I require for the knowledge of my own self, besides consciousness, or besides my thinking myself, an intuition also of the manifold in me, to determine that thought. I exist, therefore, as an intelligence, being simply conscious of my power of connection: but with respect to the manifold that has to be connected, I am subject to a limiting condition which is called the internal sense,

[1] The I think expresses the act of determining my own existence. What is thus given is the existence, but what is not yet given, is the manner in which I am to determine it, that is, in which I am to place within me the manifold belonging to it. For that purpose self-intuition is required, which depends on an *a priori* form, that is, on time, which is sensuous, and belongs to our receptivity of what is given to us as determinable. If, then, I have not another self-intuition which, likewise *before* the act of *determination*, gives the *determining* within me, of the spontaneity of which I am conscious only, as *time* gives the determinable, I cannot determine my existence as that of a spontaneously acting being, but I only represent to myself the spontaneity of my thinking, that is, of the act of determination, my existence remaining sensuous only, that is, determinable, as the existence of a phenomenon. It is on account of this spontaneity that I call myself an *intelligence*.

according to which that connection can only become perceptible in relations of time, which lie entirely outside the concepts of the understanding. Such an intelligence, therefore, can only know itself as it appears to itself in an intuition (which cannot be intellectual and given by the understanding itself), and not as it would know itself, if its *intuition* were intellectual.

§ 26.

Transcendental Deduction of the universally possible employment of the pure Concepts of the Understanding in Experience.

In the *metaphysical deduction* of the *categories* their *a priori* origin was proved by their complete accordance with the general logical functions of thought, while in their *transcendental* deduction we established their possibility as knowledge *a priori* of objects of an intuition in general (§ 20, 21). Now we have to explain the possibility of our knowing *a priori*, by means of the categories, whatever objects may *come before our senses*, and this not according to the form of their intuition, but according to the laws of their connection, and of our thus, as it were, prescribing laws to nature, nay, making nature possible. Unless they were adequate to that purpose, we could not understand how everything that may come before our senses must be subject to laws which have their origin *a priori* in the understanding alone.

First of all, I observe that by the *synthesis of apprehension* I understand the connection of the manifold in an empirical intuition, by which percep-

tion, that is, empirical consciousness of it (as phenomenal), becomes possible.

We have *a priori* forms of the external as well as the internal intuition, in our representations of space and time: and to these the synthesis of the apprehension of the manifold in phenomena must always conform, because it can take place according to that form only. Time and space, however, are represented *a priori*, not only as *forms* of sensuous intuition, but as *intuitions* themselves (containing a manifold), and therefore with the determination of the *unity* of that manifold in them (see Transcendental Æsthetic[1]). Therefore *unity of the synthesis* of the manifold without or within us, and consequently a *connection* to which everything that is to be represented as determined in space and time must conform, is given *a priori* as the condition of the synthesis of all *apprehension simultaneously with* the intuitions, not *in* them, and that synthetical unity can be no other but that of the connection of the manifold of any *intuition whatsoever*, given in an original consciousness, according to the categories, only applied to our *sensuous intuition*. Consequently,

[1] Space, represented as an object, (as required in geometry) contains more than the mere form of intuition, namely, the *comprehension* of the manifold, which is given according to the form of sensibility, into a *perceptible* (intuitable) representation, so that the *form of intuition* gives the manifold only, while the *formal intuition* gives unity of representation. In the Æsthetic I had simply ascribed this unity to sensibility, in order to show that it precedes all concepts, though it presupposes a synthesis not belonging to the senses, and by which all concepts of space and time become first possible. For as by that synthesis (the understanding determining the sensibility) space and time are first *given* as intuitions, the unity of that intuition *a priori* belongs to space and time, and not to the concept of the understanding. (See § 24.)

all synthesis, without which even perception would be impossible, is subject to the categories; and as experience consists of knowledge by means of connected perceptions, the categories are conditions of the possibility of experience, and valid therefore *a priori* for all objects of experience.

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If, for instance, I raise the empirical intuition of a house, through the apprehension of the manifold contained therein, into a perception, the *necessary unity* of space and of external sensuous intuition in general is presupposed, and I draw, as it were, the shape of the house according to that synthetical unity of the manifold in space. But this very synthetical unity, if I make abstraction of the form of space, has its seat in the understanding, and is in fact the category of the *synthesis* of the *homogeneous* in intuition in general: that is, the category of *quantity*, to which that synthesis of apprehension, that is, the perception, must always conform [1].

Or if, to take another example, I perceive the freezing of water, I apprehend two states (that of fluidity and that of solidity), and these as standing to each other in a relation of time. But in the time, which as *internal intuition* I make the foundation of the phenomenon, I represent to myself necessarily synthetical *unity* of the manifold, without which that relation could not be given as *determined* in an intuition (with reference to the succession of time).

[1] In this manner it is proved that the synthesis of apprehension must necessarily conform to the synthesis of apperception, which is intellectual, and contained in the category entirely *a priori*. It is one and the same spontaneity, which there, under the name of imagination, and here, under the name of understanding, brings connection into the manifold of intuition.

That synthetical unity, however, as a condition *a priori*, under which I connect the manifold of *any intuition*, turns out to be, if I make abstraction of the permanent form of my intuition, namely, of time, the category of *cause*, through which, if I apply it to my sensibility, I determine *everything that happens, according to its relation in time.* Thus the apprehension in such an event, and that event itself considered as a possible perception, is subject to the concept of the *relation of cause and effect.* The same applies to all other cases.

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Categories are concepts which *a priori* prescribe laws to all phenomena, and therefore to nature as the sum total of all phenomena (natura materialiter spectata). The question therefore arises, as these laws are not derived from nature, and conform to it as their model (in which case they would be empirical only), how we can understand that nature should conform to them, that is, how they can determine *a priori* the connection of the manifold in nature, without taking that connection from nature. The solution of that riddle is this.

It is no more surprising that the laws of phenomena in nature must agree with the understanding and its form *a priori*, that is, with its power of *connecting* the manifold in general, than that the phenomena themselves must agree with the form of sensuous intuition *a priori*. For laws exist as little in phenomena themselves, but relatively only, with respect to the subject to which, so far as it has understanding, the phenomena belong, as phenomena exist by themselves, but relatively only, with respect to the same being so far as it has senses. Things by themselves would necessarily possess their con-

formity to the law, independent also of any understanding by which they are known. But phenomena are only representations of things, unknown as to what they may be by themselves. As mere representations they are subject to no law of connection, except that which is prescribed by the connecting faculty. Now that which connects the manifold of sensuous intuition is the faculty of imagination, which receives from the understanding the unity of its intellectual synthesis, and from sensibility the manifoldness of apprehension. Thus, as all possible perceptions depend on the synthesis of apprehension, and that synthesis itself, that empirical synthesis, depends on the transcendental, and therefore on the categories, it follows that all possible perceptions, everything in fact that can come to the empirical consciousness, that is, all phenomena of nature, must, so far as their connection is concerned, be subject to the categories. On these categories, therefore, nature (considered as nature in general) depends, as on the original ground of its necessary conformity to law (as natura formaliter spectata). Beyond the laws, on which *nature in general*, as a lawful order of phenomena in space and time depends, the pure faculty of the understanding is incapable, by means of mere categories, of prescribing *a priori* laws to phenomena. Special laws, therefore, as they refer to phenomena which are empirically determined, cannot be completely derived from the categories, although they are all subject to them. Experience must be superadded in order to know such special laws: while those other *a priori* laws inform us only with regard to experience in general, and what can be known as an object of it.

§ 27.

Results of this Deduction of the Concepts of the Understanding.

We cannot *think* any object except by means of the categories; we cannot *know* any subject that has been thought, except by means of intuitions, corresponding to those concepts. Now all our intuitions are sensuous, and this knowledge, so far as its object is given, is empirical. But empirical knowledge is experience, and therefore no *knowledge a priori* is possible to us, except of *objects* of possible *experience* only[1].

This knowledge, however, though limited to objects of experience, is not therefore entirely derived from experience, for both the pure intuitions and the pure concepts of the understanding are elements of knowledge which exist in us *a priori*. Now there are only two ways in which a necessary harmony of experience with the concepts of its objects can be conceived; either experience makes these concepts possible, or these concepts make experience possible. The former will not hold good with respect to the

[1] Lest anybody should be unnecessarily frightened by the dangerous consequences of this proposition, I shall only remark that the categories are not limited for the purpose of *thought* by the conditions of our sensuous intuition, but have really an unlimited field. It is only the *knowledge* of that which we think, the determining of an object, that requires intuition, and even in the absence of intuition, the thought of the object may still have its true and useful consequences, so far as the subjective *use of reason* is concerned. That use of reason, however, as it is not always directed to the determination of the object, that is to knowledge, but also to the determination of the subject, and even its volition, cannot be treated of in this place.

categories, (nor with pure sensuous intuition) for they are concepts *a priori*, and therefore independent of experience. To ascribe to them an empirical origin, would be to admit a kind of generatio æquivoca. There remains therefore the second alternative only (a kind of system of the *epigenesis* of pure reason), namely, that the categories, on the part of the understanding, contain the grounds of the possibility of all experience in general. How they render experience possible, and what principles of the possibility of experience they supply in their employment on phenomena, will be shown more fully in the following chapter on the transcendental employment of the faculty of judgment.

Some one might propose to adopt a middle way between the two, namely, that the categories are neither *self-produced* first principles *a priori* of our knowledge, nor derived from experience, but subjective dispositions of thought, implanted in us with our existence, and so arranged by our Creator that their employment should accurately agree with the laws of nature, which determine experience (a kind of *system of preformation* of pure reason). But, in that case, not only would there be no end of such an hypothesis, so that no one could know how far the supposition of predetermined dispositions to future judgments might be carried, but there is this decided objection against that middle course that, by adopting it, the categories would lose that necessity which is essential to them. Thus the concept of cause, which asserts, under a presupposed condition, the necessity of an effect, would become false, if it rested only on some subjective necessity implanted in us of connecting certain empirical representations according to the rule of causal relation. I should not be able

to say that the effect is connected with the cause in the object (that is, by necessity), but only, I am so constituted that I cannot think these representations as connected in any other way. This is exactly what the sceptic most desires, for in that case all our knowledge, resting on the supposed objective validity of our judgments, is nothing but mere illusion, nor would there be wanting people to say they knew nothing of such subjective necessity (which can only be felt); and at all events we could not quarrel with anybody about what depends only on the manner in which his own subject is organised.

Comprehensive View of this Deduction.

The deduction of the pure concepts of the understanding (and with them of all theoretical knowledge *a priori*) consists in representing them as principles of the possibility of experience, and in representing experience as the *determination* of phenomena in space and time,—and, lastly, in representing that determination as depending on the principle of the *original* synthetical unity of apperception, as the form of the understanding applied to space and time, the original forms of sensibility[1].

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[1] Kant does not carry the division into paragraphs in his second edition further, because, as he says, he has to treat no more of elementary concepts, and prefers, in representing their employment, to adopt a continuous treatment without paragraphs.

SUPPLEMENT XV. [See vol. ii. p. 143]

All conjunction (conjunctio) is either *composition* (compositio) or *connection* (nexus). The former is the synthesis of a manifold the parts of which do not *belong to each other necessarily.* The two triangles, for instance, into which a square is divided by a diagonal, do by themselves not necessarily belong to each other. Such is the synthesis of the *homogeneous,* in everything that can be considered *mathematically,* and that synthesis can be divided again into *aggregation,* and *coalition,* the former referring to *extensive,* the latter to *intensive* qualities. The latter (conjunction nexus) is the synthesis of a manifold, in so far as its elements *belong to each other necessarily.* Thus the accident belonging to a substance, or the effect belonging to a cause, though *heterogeneous,* are yet represented as *a priori* connected, which connection, as it is not arbitrary, I call *dynamical,* because it concerns the connection of the *existence* of the manifold. This may again be divided into the *physical* connection of phenomena among each other, and their *metaphysical* connection in the faculty of cognition *a priori.* (This forms a note in the 2nd Edition.)

SUPPLEMENT XVI a. [See vol. ii. p. 143]

In the 2nd Edition the title is

I.

AXIOMS OF INTUITION.

Their principle is: all intuitions are extensive quantities.

Proof.

ALL phenomena contain, so far as their form is concerned, an intuition in space and time, which forms the *a priori* foundation of all of them. They cannot, therefore, be apprehended, that is, received into empirical consciousness, except through the synthesis of the manifold, by which the representations of a definite space or time are produced, i.e. through the synthesis of the homogeneous, and the consciousness of the synthetical unity of that manifold (homogeneous). Now the consciousness of the manifold and homogeneous in intuition, so far as by it the representation of an object is first rendered possible, is the concept of quantity (quantum). Therefore even the perception of an object as a phenomenon is possible only through the same synthetical unity of the manifold of the given sensuous intuition, by which the unity of the composition of the manifold and homogeneous is conceived in the concept of a *quantity*; that is, phenomena are always quantities, and *extensive quantities*; because as intuitions in space and time, they must be represented through the same synthesis through which space and time in general are determined.

SUPPLEMENT XVI b. [See vol. ii. p. 147]

II.

Anticipations of Perception.

Their principle is: In all *phenomena* the *Real*, which is the *object of a sensation, has intensive quantity*, that is, a degree.

Proof.

Perception is empirical consciousness, that is, a consciousness in which there is at the same time sensation. Phenomena, as objects of perception, are not pure (merely formal) intuitions, like space and time (for space and time can never be perceived by themselves). They contain, therefore, over and above the intuition, the material for some one object in general (through which something existing in space and time is represented); that is, they contain the real of sensation, as a merely subjective representation, which gives us only the consciousness that the subject is affected, and which is referred to some object in general. Now there is a gradual transition possible from empirical to pure consciousness, till the real of it vanishes completely and there remains a merely formal consciousness (*a priori*) of the manifold in space and time; and, therefore, a synthesis also is possible in the production of the quantity of a sensation, from its beginning, that is, from the pure intuition = 0, onwards to any quantity of it. As sensation by itself is no objective representation, and as in it the intuition of neither space nor time can be found, it follows that though not an extensive, yet some

kind of quantity must belong to it (and this through the apprehension of it, in which the empirical consciousness may grow in a certain time from nothing $=0$ to any amount). That *quantity* must be *intensive*, and corresponding to it, an intensive quantity, i.e. a degree of influence upon the senses, must be attributed to all objects of perception, so far as it contains sensation.

SUPPLEMENT XVII. [See vol. ii. p. 155]

III.

Analogies of Experience.

Their principle is: experience is possible only through the representation of a necessary connection of perceptions.

Proof.

Experience is empirical knowledge, that is, knowledge which determines an object by means of perceptions. It is, therefore, a synthesis of perceptions, which synthesis itself is not contained in the perception, but contains the synthetical unity of the manifold of the perceptions in a consciousness, that unity constituting the essential of our knowledge of the objects of the senses, i.e. of experience (not only of intuition or of sensation of the senses). In experience perceptions come together contingently only, so that no necessity of their connection could be discovered in the perceptions themselves, apprehension being only a composition of the manifold of empirical intuition, but containing no representation of the necessity of the connected existence of phenomena which it places together in space and time. Experience, on the contrary, is a knowledge of objects by perceptions, in which therefore the relation in the existence of the manifold is to be represented, not as it is put together in time, but as it is in time, objectively. Now, as time itself cannot be perceived, the

determination of the existence of objects in time can take place only by their connection in time in general, that is, through concepts connecting them *a priori*. As these concepts always imply necessity, we are justified in saying that experience is possible only through a representation of the necessary connection of perceptions.

SUPPLEMENT XVIII. [See vol. ii. p. 160]

A. First Analogy.

Principle of the Permanence of Substance.

In all changes of phenomena the substance is permanent, and its quantum is neither increased nor diminished in nature.

Proof.

All phenomena exist in time, and in it alone, as the substratum (as permanent form of the internal intuition) can *simultaneousness* as well as *succession* be represented. Time, therefore, in which all change of phenomena is to be thought, does not change, for it is that in which simultaneousness and succession can be represented as determinations of it. As time by itself cannot be perceived, it follows that the substratum which represents time in general, and in which all change or simultaneousness can be perceived in apprehension, through the relation of phenomena to it, must exist in the objects of perception, that is, in the phenomena. Now the substratum of all that is real, that is of all that belongs to the existence of things, is the *substance*, and all that belongs to existence can be conceived only as a determination of it. Consequently the permanent, in reference to which alone all temporal relations of phenomena can be deter-

mined, is the substance in phenomena, that is, what is real in them, and, as the substratum of all change, remains always the same. As therefore substance cannot change in existence, we were justified in saying that its quantum can neither be increased nor diminished in nature.

SUPPLEMENT XIX. [See vol. ii. p. 166]

B. Second Analogy.

Principle of the Succession of Time, according to the Law of Causality.

All changes take place according to the law of connection between cause and effect.

Proof.

(It has been shown by the preceding principle, that all phenomena in the succession of time are *changes* only, i. e. a successive being and not-being of the determinations of the substance, which is permanent, and consequently that the being of the substance itself, which follows upon its not-being, and its not-being, which follows on its being,—in other words, that an arising or perishing of the substance itself is inadmissible. The same principle might also have been expressed thus: *all change* (*succession*) *of phenomena consists in modification only*, for arising and perishing are no modifications of the substance, because the concept of modification presupposes the same subject as existing with two opposite determinations, and therefore as permanent. After this preliminary remark, we shall proceed to the proof.)

I perceive that phenomena succeed each other, that is, that there is a state of things at one time the opposite of which existed at a previous time. I am therefore really connecting two perceptions in time. That connection is not a work of the senses only and

of intuition, but is here the product of a synthetical power of the faculty of imagination, which determines the internal sense with reference to relation in time. Imagination, however, can connect those two states in two ways, so that either the one or the other precedes in time: for time cannot be perceived by itself, nor can we determine in the object empirically and with reference to time, what precedes and what follows. I am, therefore, conscious only that my imagination places the one before, the other after, and not, that in the object the one state comes before the other. In other words, the objective relation of phenomena following upon each other remains undetermined by mere perception. In order that this may be known as determined, it is necessary to conceive the relation between the two states in such a way that it should be determined thereby with necessity, which of the two should be taken as coming first, and which as second, and not conversely. Such a concept, involving a necessity of synthetical unity, can be a pure concept of the understanding only, which is not supplied by experience, and this is, in this case, the concept of the *relation of cause and effect*, the former determining the latter in time as the consequence, not as something that by imagination might as well be antecedent, or not to be perceived at all. Experience itself, therefore, that is, an empirical knowledge of phenomena, is possible only by our subjecting the succession of phenomena, and with it all change, to the law of causality, and phenomena themselves, as objects of experience, are consequently possible according to the same law only.

SUPPLEMENT XX. [See vol. ii. p. 184]

C. Third Analogy.

Principle of Coexistence, according to the Law of Reciprocity or Community.

All substances, so far as they can be perceived as coexistent in space, are always affecting each other reciprocally.

Proof.

Things are coexistent when, in empirical intuition, the perception of the one can follow upon the perception of the other, and *vice versa*, which, as was shown in the second principle, is impossible in the temporal succession of phenomena. Thus I may first observe the moon and afterwards the earth, or, conversely also, first the earth and afterwards the moon, and because the perceptions of these objects can follow each other in both ways, I say that they are coexistent. Now coexistence is the existence of the manifold in the same time. Time itself, however, cannot be perceived, so that we might learn from the fact that things exist in the same time that their perceptions can follow each other reciprocally. The synthesis of imagination in apprehension would, therefore, give us each of these perceptions as existing in the subject, when the other is absent, and *vice versa* : it would never tell us that the objects are coexistent, that is, that if the one is there, the other

also must be there in the same time, and this by necessity, so that the perceptions may follow each other reciprocally. Hence we require a concept of the reciprocal sequence of determinations of things existing at the same time, but outside each other, in order to be able to say, that the reciprocal sequence of the perceptions is founded in the object, and thus to represent their coexistence as objective. The relation of substances, however, of which the first has determinations the ground of which is contained in the other, is the relation of influence, and if, conversely also, the first contains the ground of determinations in the latter, the relation is that of community or reciprocity. Hence the coexistence of substances in space cannot be known in experience otherwise but under the supposition of reciprocal action: and this is therefore the condition also of the possibility of things as objects of experience.

SUPPLEMENT XXI. [See vol. ii. p. 197]

An important protest, however, against these rules for proving existence mediately is brought forward by *Idealism*, and this is therefore the proper place for its refutation.

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Refutation of Idealism.

Idealism (I mean *material* idealism) is the theory which declares the existence of objects in space, without us, as either doubtful only and not demonstrable, or as false and impossible. The *former* is the *problematical* idealism of Descartes, who declares one empirical assertion only to be undoubted, namely, that of *I am*; the *latter* is the *dogmatical* idealism of Berkeley, who declares space and all things to which it belongs as an inseparable condition, as something impossible in itself, and, therefore, the things in space as mere imaginations. Dogmatic idealism is inevitable, if we look upon space as a property belonging to things by themselves, for in that case space and all of which it is a condition, would be a non-entity. The ground on which that idealism rests has been removed by us in the Transcendental Æsthetic. Problematical idealism, which asserts nothing, but only pleads our inability of proving any existence except our own by means of immediate experience, is reasonable and in accordance with a sound philosophical mode of thought, which allows of no decisive judgment, before a sufficient

proof has been found. The required proof will have to demonstrate that we may have not only an *imagination*, but also an *experience* of external things, and this it seems can hardly be effected in any other way except by proving that even our internal experience, which Descartes considers as undoubted, is possible only under the supposition of external experience.

Theorem.

The simple, but empirically determined Consciousness of my own existence, proves the Existence of objects in space outside myself.

Proof.

I am conscious of my own existence as determined in time, and all determination in time presupposes something *permanent* in the perception[1]. That *permanent*, however, cannot be an intuition within me, because all the causes which determine my existence, so far as they can be found within me, are representations, and as such require themselves something permanent, different from them, in reference to which their change, and therefore my existence in the time in which they change, may be determined. The perception of this permanent, therefore, is possible only through a thing *outside* me, and not through the mere *representation* of a thing outside me, and the determination of my existence in time is, consequently, possible only by the existence of real things, which I perceive outside me. As therefore the con-

[1] This passage has been translated as amended by Kant himself in the Preface to the Second Edition (p. 386).

sciousness in time is necessarily connected with the consciousness of the possibility of that determination of time, it is also necessarily connected with the existence of things outside me, as the condition of the determination of time. In other words, the consciousness of my own existence is, at the same time, an immediate consciousness of the existence of other things.

NOTE 1.—It will have been perceived that in the foregoing proof the trick played by idealism has been turned against it, and with greater justice. Idealism assumed that the only immediate experience is the internal, and that from it we can no more than *infer* external things, though in an untrustworthy manner only, as always happens if from given effects we infer *definite* causes: it being quite possible that the cause of the representations, which are ascribed by us, it may be wrongly, to external things, may lie within ourselves. We, however, have proved that external experience is really immediate[1], and that only by means of it, though not the consciousness of our own existence, yet its determination in time, that is, internal experience, becomes possible. No doubt the

[1] The *immediate* consciousness of the existence of external things is not simply assumed in the preceding theorem, but proved, whether we can understand its possibility or not. The question with regard to that possibility would come to this, whether we have an internal sense only, and no external sense, but merely an external imagination. It is clear, however, that, even in order to imagine only something as external, that is, to represent it to the senses in intuition, we must have an external sense, and thus distinguish immediately the mere receptivity of an external intuition from that spontaneity which characterizes every act of imagination. For only to imagine an external sense would really be to destroy the faculty of intuition, which is to be determined by the faculty of imagination.

representation of *I am*, which expresses the consciousness that can accompany all thought, is that which immediately includes the existence of a subject: but it does not yet include a *knowledge* of it, and therefore no empirical knowledge, that is, experience. For that we require, besides the thought of something existing, intuition also, and in this case internal intuition, in respect to which, that is, to time, the subject must be determined. For that purpose external objects are absolutely necessary, so that internal experience itself is possible, mediately only, and through external experience.

NOTE 2.—This view is fully confirmed by the empirical use of our faculty of knowledge, as applied to the determination of time. Not only are we unable to perceive any determination of time, except through a change in external relations (motion) with reference to what is permanent in space (for instance, the movement of the sun with respect to terrestrial objects), but we really have nothing permanent to which we could refer the concept of a substance, as an intuition, except *matter* only: and even this permanence is not derived from external experience, but presupposed *a priori* as a necessary condition of all determination of time, and therefore also as the determination of the internal sense with respect to our own existence through the existence of external things. The consciousness of myself, in the representation of the ego, is not an intuition, but a merely *intellectual* representation of the spontaneity of a thinking subject. Hence that ego has not the slightest predicate derived from intuition, which, as *permanent*, might serve as the correlate of the determination of time in the internal sense: such as

impermeability, for instance, is with regard to matter, as an *empirical* intuition.

NOTE 3.—Because the existence of external objects is required for the possibility of a definite consciousness of ourselves, it does not follow that every intuitional representation of external things involves, at the same time, their existence; for such a representation may well be the mere effect of the faculty of imagination (in dreams as well as in madness), and is possible only through the reproduction of former external perceptions, which, as we have shown, is impossible without the reality of *external* objects. What we wanted to prove here was only that internal experience in general is possible only through external experience in general. Whether this or that supposed experience be purely imaginary, must be settled according to its own particular determinations, and through a comparison with the criteria of all real experience.

SUPPLEMENT XXII. [See vol. ii. p. 204]

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General note on the System of the Principles.

It is something very remarkable that we cannot understand the possibility of anything from the category alone, but must always have an intuition in order to exhibit by it the object of reality of the pure concept of the understanding. Let us take, for instance, the categories of relation. It is impossible to understand, from mere concepts alone:

First, how something can exist as *subject* only, and not as a mere determination of other things, that is, how it can be a *substance*: or,

Secondly, how, because something is, something else must be, that is, how something can ever be a cause: or,

Thirdly, how, when there are several things, something could follow from the existence of one of them as affecting the rest, and *vice versa*, so that there should exist, in this way, a certain community of substances. The same applies to the other categories, as, for instance, how a thing could be of the same kind as many others, and thus be a quantity. So long as there is no intuition, we do not know whether by the categories we conceive an object, nay, whether any object can at all belong to them: and thus we see again that by themselves the categories are not *knowledge*, but mere *forms of thought*, by which given intuitions are turned into knowledge.

It likewise follows from this, that no synthetical proposition can be made out of mere categories, as, for instance, if it is said that in everything existing there is substance, i.e. something that can exist as subject only, and not as a mere predicate; or, everything is a quantum, &c. Here we have really nothing whatever which would enable us to go beyond a given concept, and to connect with it another. Hence no one has ever succeeded in proving a synthetical proposition by pure concepts of the understanding only: as, for instance, the proposition that everything which exists contingently, has a cause. All that could be proved was, that, without such a relation, we could not conceive the existence of what is contingent, that is, that we could not know *a priori* through the understanding the existence of such a thing; from which it does not follow in the least that the same condition applies to the possibility of things themselves. If the reader will go back to our proof of the principle of causality, he will perceive that we could prove it of objects of possible experience only, by saying that everything which happens (every event) presupposes a cause. We could prove it only as the principle of the possibility of experience, that is, of the *knowledge* of an object, given in *empirical intuition*, but not by means of mere concepts. It is perfectly true, that nevertheless this proposition, that everything contingent must have a cause, carries conviction to everybody from mere concepts: but it should be observed, that in this case the concept of the contingent contains no longer the category of modality (as something the non-existence of which can be conceived), but that of relation (as something which can only exist as the consequence of something else). It thus becomes in

reality an identical proposition, namely, that that which can exist as a consequence only has its cause. And thus, when we have to give examples of contingent existence, we have always recourse to *changes*, and not only to the possibility of *conceiving* the *opposite*[1]. Change, however, is an event which, as such, is possible through a cause only, and the non-existence of which is therefore possible in itself. We thus mean by contingency, that something can exist as the effect of a cause only; and if therefore a thing is assumed to be contingent, it becomes a merely analytical proposition to say that it has a cause.

It is still more remarkable, however, that, in order to understand the possibility of things according to the categories, and thus to establish the *objective reality* of the latter, we require not only intuitions, but always *external intuitions*. Thus, if we take, for instance, the pure concepts of *relation*, we find that:

First, in order to give something *permanent* in intuition, corresponding to the concept of *substance* (and thus to show the objective reality of that con-

[1] It is easy enough to conceive the non-existence of matter, but the ancients did not infer from this its contingency. Not even the change of being and not-being of any given state of a thing, which constitutes all change, can prove the contingency of that state, as if from the reality of its opposite. The rest of a body, for instance, following on its motion, does not yet prove the contingency of that motion, because the former is the opposite of the latter. The opposite here is *opposed* to the other, not *realiter*, but logically only. In order to prove the contingency of the motion of a body, we should have to prove that *instead* of the motion at the antecedent point of time, it would have been possible for the body to have been at rest *at that very time*, not that it is at rest *afterwards*; for in this case both opposites are quite consistent with each other.

cept), we require an intuition in space (of matter), because space alone can determine anything as permanent, while time, and therefore everything that exists in the internal sense, is in a constant flux.

Secondly, that in order to exhibit *change*, as the intuition corresponding to the concept of *causality*, we must use motion as change in space for our example, nay, can thus only gain an intuition of changes the possibility of which no pure understanding can ever conceive. Change is the connection of contradictory opposites in the existence of one and the same thing. Now, how it is possible that from a given state another state, opposed to it, should arise in the same thing, no reason can comprehend without an example; nay, without an intuition, it cannot even render intelligible to itself. That intuition, however, is that of the motion of a point in space, the presence of which in different places (as a consequence of opposite determinations) gives us, for the first time, an intuition of change: so that, in order to make even internal changes afterwards conceivable to ourselves, we must make time, as the form of the internal sense, figuratively comprehensible to ourselves by means of a line, and the internal change by means of the drawing of that line (motion): in other words, the successive existence of ourselves in different states, by means of an external intuition. The real reason of this lies in the fact that all change presupposes something permanent in intuition, in order that it may itself be perceived as change, while no permanent intuition is to be found in the internal sense.

Thirdly, and lastly, the category of *community* cannot, so far as its possibility is concerned, be conceived by mere reason alone: and the objective reality

of that concept cannot therefore be possibly understood without intuition, and without external intuition in space. For how should we conceive the possibility that, when several substances exist, something (as an effect) could follow from the existence of one of them as affecting reciprocally the existence of the other, and that, therefore, because there is something in the former, something must also be in the latter, which, from the existence of the latter alone, could not be understood? For this is necessary to establish community, though it is utterly inconceivable among things, each of which completely isolates itself through its substantiality. Leibniz, therefore, as he attributed community to the substances of the world, as conceived by the understanding alone, required the interference of a Deity; because, as he justly perceived, such community would have been inconceivable from the existence of such substances only. We, on the contrary, can render the possibility of such a communion (of substances as phenomena) perfectly conceivable to ourselves, if we represent them to ourselves in space, that is, in external intuition. For space contains, even *a priori*, formal external relations, as conditions of the possibility of the real relations of action and reaction, that is, of community.

It is easy to show, in the same manner, that the possibility of things as *quanta*, and therefore, the objective reality of the category of quantity, can be exhibited in external intuition only, and, by means of it alone, be afterwards applied to the internal sense. But, in order to avoid prolixity, I must leave it to the reflection of the reader to find the examples of this.

The whole of these notes is of great importance,

not only as confirming our previous refutation of idealism, but even more, when we come to treat of *self-knowledge* by mere internal consciousness, and the determination of our own nature, without the help of external empirical intuitions, in order to show us the limits of the possibility of such knowledge.

The last result of the whole of this section is therefore this: All principles of the pure understanding are nothing more than *a priori* principles of the possibility of experience; and to experience alone do all synthetical propositions *a priori* relate: nay, their possibility itself rests entirely on that relation.

SUPPLEMENT XXIII. [See vol. ii. p. 213]

In one word, none of these concepts admit of being *authenticated*, nor can their real possibility be proved, if all sensuous intuition (the only one which we possess) is removed, and there remains in that case a *logical* possibility only, that is, that a concept (a thought) is possible. This, however, does not concern us here, but only whether the concept refers to an object and does therefore signify anything.

SUPPLEMENT XXIV. [See vol. ii. p. 216]

We are met here by an illusion which is difficult to avoid. The categories do not depend in their origin on sensibility, like the forms of *intuition*, space and time, and seem, therefore, to admit of an application extending beyond the objects of the senses. But, on the other side, they are nothing but *forms of thought*, containing the logical faculty only of comprehending *a priori* in one consciousness the manifold that is given in intuition, and they would therefore, if we take away the only intuition which is possible to us, have still less significance than those pure sensuous forms by which at least an object is given, while a peculiar mode of our understanding of connecting the manifold (unless that intuition, in which the manifold alone can be given, is added), signifies nothing at all.

Nevertheless, it seems to follow from our very concept, if we call certain objects, as phenomena, beings of the senses, by distinguishing between the mode of our intuition and the nature of those objects by themselves, that we may take either the same objects in that latter capacity, though they cannot as such come before our intuition, or other possible things, which are not objects of our senses at all, and place them, as objects conceived by the understanding alone, in opposition to the former, calling them beings of the understanding (noumena). The question then

arises, whether our pure concepts of the understanding do not possess some significance with regard to these so-called beings of the understanding, and constitute a mode of knowing them?

At the very outset, however, we meet with an ambiguity which may cause great misapprehension. The understanding, by calling an object in one aspect a phenomenon only, makes to itself, apart from that aspect, another representation of *an object by itself*, and imagines itself able to form *concepts* of such an object. As, then, the understanding yields no other concepts but the categories, it supposes that the object in the latter aspect can be conceived at least by those pure concepts of the understanding, and is thus induced to take the entirely indefinite concept of a being of the understanding, as of a something in general outside our sensibility, as a *definite* concept of a being which we might know to a certain extent through the understanding.

If by noumenon we mean a thing so far as it is *not an object of our sensuous intuition*, and make abstraction of our mode of intuition, it may be called a noumenon in a *negative* sense. If, however, we mean by it an *object* of a *non-sensuous intuition*, we admit thereby a peculiar mode of intuition, namely, the intellectual, which, however, is not our own, nor one of which we can understand even the possibility. This would be the noumenon in a *positive* sense.

The doctrine of sensibility is at the same time the doctrine of noumena in their negative sense; that is, of things which the understanding must conceive without reference to our mode of intuition, and therefore, not as phenomena only, but as things by themselves, but to which, after it has thus separated

them, the understanding knows that it must not, in this new aspect, apply its categories; because these categories have significance only with reference to the unity of intuitions in space and time, and can therefore *a priori* determine that unity, on account of the mere ideality of space and time only, by means of general connecting concepts. Where that unity in time cannot be found, i.e. in the noumenon, the whole use, nay, the whole significance of categories comes to an end: because even the possibility of things that should correspond to the categories, would be unintelligible. On this point I may refer the reader to what I have said at the very beginning of the general note to the previous chapter (Suppl. XXII). The possibility of a thing can never be proved from the fact that its concept is not self-contradictory, but only by being authenticated by an intuition corresponding to it. If, therefore, we attempted to apply the categories to objects which are not considered as phenomena, we should have to admit an intuition other than the sensuous, and thus the object would become a noumenon in a *positive sense*. As, however, such an intuition, namely, an intellectual one, is entirely beyond our faculty of knowledge, the use of the categories also can never reach beyond the limits of the objects of experience. Beings of the understanding correspond no doubt to beings of the senses, and there may be beings of the understanding to which our faculty of sensuous intuition has no relation at all; but our concepts of the understanding, being forms of thought for our sensuous intuition only, do not reach so far, and what is called by us a noumenon must be understood as such in a *negative sense* only.

SUPPLEMENT XXV. [See vol. ii. p. 223]

We must not speak, as is often done, of an *intellectual* world, for intellectual and sensitive apply to *knowledge* only. That, however, to which the one or the other mode of intuition applies, that is, the *objects* themselves, must, however harsh it may sound, be called intelligible or sensible.

SUPPLEMENT XXVI. [See vol. ii. p. 293]

METAPHYSIC has for the real object of its investigations three ideas only, *God*, *Freedom*, and *Immortality*; the second concept connected with the first leading by necessity to the third. Everything else treated by that science is a means only in order to establish those ideas and their reality. Metaphysic does not require these ideas for the sake of natural science; but, in order to go beyond nature, a right insight into them would make *theology*, *morality*, and, by the union of both, *religion* also, therefore the highest objects of our existence, dependent on the speculative faculty of reason only, and on nothing else. In a systematical arrangement of those ideas the above order, being *synthetical*, would be the most appropriate; but in their elaboration, which must necessarily come first, the *analytical* or inverse order is more practical, enabling us, by starting from what is given us by experience, namely, the *study of the soul* (psychology), and proceeding thence to the *study of the world* (cosmology), and lastly, to a *knowledge of God* (theology), to carry out the whole of our great plan in its entirety.

SUPPLEMENT XXVII. [See vol. ii. p. 303]

We shall therefore follow it with a critical eye through all the predicaments of pure psychology; but we shall, for the sake of brevity, let their examination proceed uninterruptedly.

The following general remark may at the very outset make us more attentive to this mode of syllogism. I do not know any object by merely thinking, but only by determining a given intuition with respect to that unity of consciousness in which all thought consists; therefore, I do not know myself by being conscious of myself, as thinking, but only if I am conscious of the intuition of myself as determined with respect to the function of thought. All modes of self-consciousness in thought are therefore by themselves not yet concepts of objects (categories), but mere logical functions, which present no object to our thought, and therefore do not present myself either as an object to be known. It is not a consciousness of the *determining*, but only that of the *determinable* self, that is, of my internal intuition (so far as the manifold in it can be connected in accordance with the general condition of the unity of apperception in thought) which forms the object.

1. In all judgments I am always the *determining subject* only of the relation which constitutes the judgment. That I, who think, can be considered in thinking as *subject* only, and as something not simply inherent in the thinking, as predicate, is an apodictical and even *identical* proposition; but it does not mean that, as an object, I am a *self-dependent being* or a

substance. The latter would be saying a great deal, and requires for its support data which are not found in the thinking, perhaps (so far as I consider the thinking subject as such) more than I shall ever find in it.

2. That the Ego of apperception, and therefore the Ego in every act of thought, is a *singular* which cannot be dissolved into a plurality of subjects, and that it therefore signifies a logically simple subject, follows from the very concept of thinking, and is consequently an analytical proposition. But this does not mean that a thinking Ego is a simple *substance*, which would indeed be a synthetical proposition. The concept of substance always relates to intuitions which, with me, cannot be other but sensuous, and which therefore lie completely outside the field of the understanding and its thinking, which alone is intended here, when we say that the Ego, in thinking, is simple. It would indeed be strange, if what elsewhere requires so great an effort, namely, to distinguish in what is given by intuition what is substance, and still more, whether that substance can be simple (as in the case of the component parts of matter), should in our case be given to us so readily in what is really the poorest of all representations, and, as it were, by an act of revelation.

3. The proposition of the identity of myself amidst the manifold of which I am conscious, likewise follows from the concepts themselves, and is therefore analytical; but the identity of the subject of which, in all its representations, I may become conscious, does not refer to the intuition by which it is given as an object, and cannot therefore signify the identity of the person, by which is understood the consciousness of the identity of one's own substance,

as a thinking being, in all the changes of circumstances. In order to prove this, the mere analysis of the proposition, I think, would avail nothing: but different synthetical judgments would be required, which are based on the given intuition.

4. To say that I distinguish my own existence, as that of a thinking being, from other things outside me (one of them being my body) is likewise an analytical proposition; for *other* things are things which I conceive as *different* from myself. But, whether such a consciousness of myself is even possible without things outside me, whereby representations are given to me, and whether I could exist merely as a thinking being (without being a man), I do not know at all by that proposition.

Nothing therefore is gained by the analysis of the consciousness of myself, in thought in general, towards the knowledge of myself as an object. The logical analysis of thinking in general is simply mistaken for a metaphysical determination of the object.

It would be a great, nay, even the only objection to the whole of our critique, if there were a possibility of proving *a priori* that all thinking beings are by themselves simple substances, that as such (as a consequence of the same argument) personality is inseparable from them, and that they are conscious of their existence as distinct from all matter. For we should thus have made a step beyond the world of sense and entered into the field of *noumena*, and after that no one could dare to question our right of advancing further, of settling in it, and, as each of us is favoured by luck, taking possession of it. The proposition that every thinking being is, as such, a simple substance, is synthetical *a priori*, because, first, it goes beyond the concept on which it rests,

and adds to act of thinking in general the *mode of existence*; and secondly, because it adds to that concept a predicate (simplicity) which cannot be given in any experience. Hence synthetical propositions *a priori* would be not only admissible, as we maintained, in reference to objects of possible experience, and then only as principles of the possibility of that experience, but could be extended to things in general and to things by themselves, a result which would put an end to the whole of our critique, and bid us to leave everything as we found it. However, the danger is not so great, if only we look more closely into the matter.

In this process of rational psychology, there lurks a paralogism, which may be represented by the following syllogism.

That which cannot be conceived otherwise than as a subject, does not exist otherwise than as a subject, and is therefore a substance.

A thinking being, considered as such, cannot be conceived otherwise than as a subject.

Therefore it exists also as such only, that is, as a substance.

In the major they speak of a being that can be conceived in every respect, and therefore also as it may be given in intuition. In the minor, however, they speak of it only so far as it considers itself as a subject, with respect to the thinking and the unity of consciousness only, but not at the same time in respect to the intuition whereby it is given as an object of thinking. The conclusion, therefore, has been drawn by a sophism, that is, by sophisma figuræ dictionis[1].

[1] The thinking is taken in each of the two premisses in a totally different meaning:—in the major, as it refers to an object in general (and therefore also as it may be given in intuition), but in the minor, only as it exists in its relation to self-consciousness,

That we are perfectly right in thus resolving that famous argument into a paralogism, will be clearly seen by referring to the general note on the systematical representation of the principles, and to the section on the noumena, for it has been proved there that the concept of a thing, which can exist by itself as a subject, and not as a mere predicate, carries as yet no objective reality, that is, that we cannot know whether any object at all belongs to it, it being impossible for us to understand the possibility of such a mode of existence. It yields us therefore no knowledge at all. If such a concept is to indicate, under the name of a substance, an object that can be given, and thus become knowledge, it must be made to rest on a permanent intuition, as the indispensable condition of the objective reality of a concept, that is, on that by which alone the object can be given. In internal intuition, however, we have nothing permanent, for the Ego is only the consciousness of my thinking; and if we do not go beyond this thinking, we are without the necessary condition for applying the concept of substance, that is of an independent subject, to the self, as a thinking being. Thus the simplicity of the substance entirely disappears with the objective reality of the concept: and is changed

where no object is thought of, but where we only represent the relation to the self as the subject (as the form of thought). In the former, things are spoken of that cannot be conceived otherwise than as subjects; while in the second we do not speak of *things*, but of the *thinking* (abstraction being made of all objects), wherein the Ego always serves as the subject of consciousness. The conclusion, therefore, ought not to be that I cannot exist otherwise than as a subject, but only, that in thinking my existence I can use myself as the subject of a judgment only. This is an identical proposition, and teaches us nothing whatever as to the mode of our existence.

into a purely logical qualitative unity of self-consciousness in thinking in general, whether the subject be composite or not.

Refutation of Mendelssohn's proof of the Permanence of the Soul.

This acute philosopher perceived very quickly how the ordinary argument that the soul (if it is once admitted to be a simple being) cannot cease to exist by *decomposition*, was insufficient to prove its necessary continuance, because it might cease to exist by simply *vanishing*. He therefore tried, in his Phædon, to prove that the soul was not liable to that kind of perishing which would be a real annihilation, by endeavouring to show that a simple being cannot cease to exist, because as it could not be diminished, and thus gradually lose something of its existence, and be changed into nothing (it having no parts, and therefore no plurality in itself), there could be no time between the one moment in which it exists, and the other in which it exists no longer; and this would be impossible.

He did not consider, however, that, though we might allow to the soul this simple nature, namely, that it contains nothing manifold, nothing by the side of each other, and therefore no extensive quantity, yet we could not deny to it, as little as to any other existing thing, intensive quantity, i. e. a degree of reality with respect to all its faculties, nay, to all which constitutes its existence. Such a degree of reality might diminish by an infinite number of smaller degrees, and thus the supposed substance (the thing, the permanence of which has not yet been established), might be changed into nothing, not indeed through

decomposition, but through a gradual remission of its powers, or, if I may say so, through elanguescence. For even consciousness has always a degree, which admits of being diminished[1], and therefore also the faculty of being conscious of oneself, as well as all other faculties.

The permanence of the soul, therefore, considered merely as an object of the internal sense, remains undemonstrated and undemonstrable, though its permanence in life, while the thinking being (as man) is at the same time to itself an object of the external senses, is clear by itself. But this does not satisfy the rational psychologist, who undertakes to prove, from mere concepts, the absolute permanence of the soul, even beyond this life[2].

[1] Clearness is not, as the logicians maintain, the consciousness of a representation; for a certain degree of consciousness, though insufficient for recollection, must exist, even in many dark representations, because without all consciousness we should make no distinction in the connection of dark representations, which yet we are able to do with the *notæ* of many concepts (such as those of right and justice, or as the musician does who in improvising strikes several keys at once). A representation is clear in which the consciousness is sufficient for a *consciousness* of its *difference* from others. If the consciousness is sufficient for distinguishing, but not for a consciousness of the difference, the representation would still have to be called dark. There is, therefore, an infinite number of degrees of consciousness, down to its complete vanishing.

[2] Those who, in establishing the possibility of a new theory, imagine that they have done enough if they can show triumphantly that no one can show a contradiction in their premisses (as do those who believe that they understand the possibility of thinking, of which they have an example in the empirical intuitions of human life only, even after the cessation of life) can be greatly embarrassed by other possible theories, which are not a whit bolder than their own. Such is, for instance, the possibility of a division of *simple substance* into several, or of the coalition of several substances into one simple substance. For although divisibility pre-

If now we take the above propositions in *synthetical* connection, as indeed they must be taken in

supposes a composite, it does not necessarily require a composite of substances, but of degrees only (of the manifold faculties) of one and the same substance. As, then, we may conceive all powers and faculties of the soul, even that of consciousness, as diminished by one-half, the substance still remaining, we may also represent to ourselves, without any contradiction, that extinguished half, though not within it, but outside it, so that as the whole of what is real in it and has a degree, and therefore the whole existence of it, without any rest, has been halved, another separate substance would arise apart from it. For the plurality, which has been divided, existed before, though not as a plurality of substances, yet of every reality as a quantum of existence in it, and the unity of substance was only a mode of existence, which by mere division has been changed into a plurality of substantiality. In the same manner several simple substances might coalesce again into one, nothing being lost thereby, but merely the plurality of substantiality; so that one substance would contain in itself the degree of reality of all former substances together. We might suppose that the simple substances which give us matter as a phenomenon (not indeed through a mechanical or chemical influence upon each other, but yet, it may be, by some unknown influence, of which the former is only a manifestation), produce by such a *dynamical* division of parental souls, taken as *intensive quantities*, what may be called child-souls, while they themselves repair their loss again through a coalition with new matter of the same kind. I am far from allowing the slightest value or validity to such vague speculations, and I hope that the principles of our Analytic have given a sufficient warning against using the categories (as, for instance, that of substance) for any but empirical purposes. But if the rationalist is bold enough to create an independent being out of the mere faculty of thought, without any permanent intuition, by which an object can be given, simply because the unity of apperception in thought does not allow him to explain it as something composite, instead of simply confessing that he can not explain the possibility of a thinking nature, why should not a *materialist*, though he can as little appeal to experience in support of his theories, be entitled to use the same boldness, and use his principle for the opposite purpose, though retaining the formal unity on which his opponent relied?

a system of rational psychology, as valid for all thinking beings, and proceed from the category of relation, with the proposition, all thinking beings, as such, are substances, backwards through the series till the circle is completed, we arrive in the end at their existence, and this, according to that system, they are not only conscious of, independently of external things, but are supposed to be able to determine it even of themselves (with respect to that permanence which necessarily belongs to the character of substance). Hence it follows, that in this rationalistic system *idealism* is inevitable, at least problematical idealism, because, if the existence of external things is not required at all for the determination of one's own existence in time, their existence is really a gratuitous assumption of which no proof can ever be given.

If, on the contrary, we proceed *analytically*, taking the proposition, I think, which involves existence (according to the category of *modality*) as given, and analyse it, in order to find out whether, and how, the Ego determines its existence in space and time by it alone, the propositions of rational psychology would not start from the concept of a thinking being, in general, but from a reality, and the inference would consist in determining from the manner in which that reality is thought, after everything that is empirical in it has been removed, what belongs to a thinking being in general. This may be shown by the following Table.

1.
I think,

2. as Subject, 3. as simple Subject,

4.
as identical Subject,
in every state of my thought.

As it has not been determined in the second proposition, whether I can exist and be conceived to exist as a subject only, and not also as a predicate of something else, the concept of subject is here taken as logical only, and it remains undetermined whether we are to understand by it a substance or not. In the third proposition, however, the absolute unity of apperception, the simple I, being the representation to which all connection or separation (which constitute thought) relate, assumes its own importance, although nothing is determined as yet with regard to the nature of the subject, or its subsistence. The apperception is something real, and it is only possible, if it is simple. In space, however, there is nothing real that is simple, for points (the only simple in space) are limits only, and not themselves something which, as a part, serves to constitute space. From this follows the impossibility of explaining the nature of my self, as merely a thinking subject, from the *materialistic* point of view. As, however, in the first proposition, my existence is taken for granted, for it is not said in it that every thinking being exists (this would predicate too much, namely, absolute necessity of them), but only, *I exist*, as thinking, the proposition itself is empirical, and contains only the determinability of my existence, in reference to my representations in time. But as for that purpose again I require, first of all, something permanent, such as is not given to me at all in internal intuition, so far as I think myself, it is really impossible by that simple self-consciousness to determine the manner in which I exist, whether as a substance or as an accident. Thus, if *materialism* was inadequate to explain my existence, *spiritualism* is equally insufficient for that purpose, and the conclusion is, that, in

no way whatsoever can we know anything of the nature of our soul, so far as the possibility of its separate existence is concerned.

And how indeed should it be possible by means of that unity of consciousness which we only know because it is indispensable to us for the very possibility of experience, to get beyond experience (our existence in life), and even to extend our knowledge to the nature of all thinking beings in general, by the empirical, but, with reference to every kind of intuition, undetermined proposition, I think.

There is, therefore, no rational psychology, as a *doctrine*, furnishing any addition to our self-knowledge, but only as a *discipline*, fixing unpassable limits to speculative reason in this field, partly to keep us from throwing ourselves into the arms of a soulless materialism, partly to warn us against losing ourselves in a vague, and, for this life, baseless spiritualism. It reminds us at the same time to look upon this refusal of our reason to give a satisfactory answer to such curious questions, which reach beyond the limits of this life, as a hint to turn our self-knowledge away from fruitless speculations to a fruitful practical use—a use which, though directed always to objects of experience only, derives its principle from a higher source, and so regulates our conduct, as if our destination reached far beyond experience, and therefore far beyond this life.

We see from all this, that rational psychology owes its origin to a mere misunderstanding. The unity of consciousness, on which the categories are founded, is mistaken for an intuition of the subject as object, and the category of substance applied to it. But that unity is only the unity in *thought*, by which alone no object is given, and to which therefore the

category of substance, which always presupposes a given *intuition*, cannot be applied, and therefore the subject cannot be known. The subject of the categories, therefore, cannot, by thinking them, receive a concept of itself, as an object of the categories; for in order to think the categories, it must presuppose its pure self-consciousness, the very thing that had to be explained. In like manner the subject, in which the representation of time has its original source, cannot determine by it its own existence in time; and if the latter is impossible, the former, as a determination of oneself (as of a thinking being in general) by means of the categories, is equally so[1].

* * * * * *

[1] The 'I think' is, as has been stated, an empirical proposition, and contains within itself the proposition, I exist. I cannot say, however, everything which thinks exists; for in that case the property of thinking would make all beings which possess it necessary beings. Therefore, my existence cannot, as Descartes supposed, be considered as derived from the proposition, I think (for in that case the major, everything that thinks exists, ought to have preceded), but is identical with it. It expresses an indefinite empirical intuition, that is, a perception (and proves, therefore, that this proposition, asserting existence, is itself based on sensation, which belongs to sensibility), but it precedes experience, which is meant to determine the object of perception through the categories in respect to time. Existence, therefore, is here not yet a category, which never refers to an indefinitely given object, but only to one of which we have a concept, and of which we wish to know whether it exists also apart from that conception. An indefinite perception signifies here something real only that has been given merely for thinking in general, not therefore as a phenomenon, nor as a thing by itself (noumenon), but as *something* that really exists and is designated as such in the proposition, I think. For it must be observed, that if I have called the proposition, I think, an empirical proposition, I did not mean to say thereby that the *ego* in that proposition is an empirical representation; it is rather purely intellectual, because it belongs to thought in general. Without some empirical repre-

Thus vanishes, as an idle dream, that knowledge which was to go beyond the limits of possible experience, and was connected no doubt with the highest interests of humanity, so far at least as speculative philosophy was to supply it. Yet no unimportant service has thus been rendered to reason by the severity of our criticism, in proving, at the same time, the impossibility of settling anything dogmatically with reference to an object of experience, beyond the limits of experience, and thus securing it against all possible assertions to the contrary. This can only be done in two ways, either by proving one's own proposition apodictically, or, if that does not succeed, by trying to discover the causes of that failure, which, if they lie in the necessary limits of our reason, must force every opponent to submit to exactly the same law of renunciation with reference to any claims to dogmatic assertion.

Nothing is lost, however, by this with regard to the right, nay the necessity of admitting a future life, according to the principles of practical, as connected with the speculative employment of reason. It is known besides, that a purely speculative proof has never been able to exercise any influence on the ordinary reason of men. It stands so entirely upon the point of a hair, that even the schools can only keep it from falling so long as they keep it constantly spinning round like a top, so that, even in their own eyes, it yields no permanent foundation upon which anything could be built. The proofs which are useful for the world at large retain their value undiminished, nay, they gain in clearness and natural power, by the

sentation, however, which supplies the matter for thought, the act, I think, would not take place, and the empirical is only the condition of the application or of the use of the pure intellectual faculty.

surrender of those dogmatical pretensions, placing reason in its own peculiar domain, namely, the system of ends, which is, however, at the same time the system of nature; so that reason, as a practical faculty by itself, without being limited by the conditions of the latter, becomes justified in extending the former, and with it, our own existence, beyond the limits of experience and of life. According to the *analogy with the nature* of living beings in this world, in which reason must necessarily admit the principle that no organ, no faculty, no impulse, can be found, as being either superfluous or disproportionate to its use, and therefore purposeless, but that everything is adequate to its destination in life, man, who alone can contain in himself the highest end of all this, would be the only creature excepted from it. For, his natural dispositions, not only so far as he uses them according to his talents and impulses, but more especially the moral law within him, go so far beyond all that is useful and advantageous in this life, that he is taught thereby, in the absence of all advantages, even of the shadowy hope of posthumous fame, to esteem the mere consciousness of righteousness beyond everything else, feeling an inner call, by his conduct in this world and a surrender of many advantages, to render himself fit to become the citizen of a better world, which exists in his idea only. This powerful and incontrovertible proof, accompanied by our constantly increasing recognition of a design pervading all that we see around us, and by a contemplation of the immensity of creation, and therefore also, by the consciousness of an unlimited possibility in the extension of our knowledge, and a desire commensurate therewith, all this remains and always will remain, although we must surrender the hope of ever being able to understand,

from mere theoretical speculation, the necessary continuance of our existence.

Conclusion of the solution of the Psychological Paralogism.

The dialectical illusion in rational psychology arises from our confounding an idea of reason (that of a pure intelligence) with the altogether indefinite concept of a thinking being in general. What we are doing is, that we conceive ourselves for the sake of a possible experience, taking no account, as yet, of any real experience, and thence conclude that we are able to become conscious of our existence, independently of experience and of its empirical conditions. We are, therefore, confounding the possible *abstraction* of our own empirically determined existence with the imagined consciousness of a possible *separate* existence of our thinking self, and we bring ourselves to believe that we know the substantial within us as the transcendental subject, while what we have in our thoughts is only the unity of consciousness, on which all determination, as the mere form of knowledge, is based.

The task of explaining the community of the soul with the body does not properly fall within the province of that psychology of which we are here speaking, because that psychology tries to prove the personality of the soul, apart also from that community (after death), being therefore *transcendent*, in the proper sense of that word, inasmuch as, though dealing with an object of experience, it deals with it only so far as it has ceased to be an object of experience. According to our doctrine, however, a sufficient answer may be returned to that question also. The difficulty

of the task consists, as is well known, in the assumed heterogeneousness of the object of the internal sense (the soul), and the objects of the external senses, the formal condition of the intuition with regard to the former being time only, with regard to the latter, time and space. If we consider, however, that both kinds of objects thus differ from each other, not internally, but so far only as the one *appears* externally to the other, and that possibly what is at the bottom of phenomenal matter, as a thing by itself, may not be so heterogeneous after all as we imagine, that difficulty vanishes, and there remains that one difficulty only, how a community of substances is possible at all; a difficulty which it is not the business of psychology to solve, and which, as the reader will easily understand, after what has been said in the Analytic of fundamental powers and faculties, lies undoubtedly beyond the limits of all human knowledge.

General note on the transition from Rational Psychology to Cosmology.

The proposition, I think, or, I exist thinking, is an empirical proposition. Such a proposition is based on an empirical intuition, and its object is phenomenal: so that it might seem as if, according to our theory, the soul was changed altogether, even in thinking, into something phenomenal, and our consciousness itself, as merely phenomenal, would thus indeed refer to nothing.

Thinking, taken by itself, is a logical function only, and therefore pure spontaneity, in connecting the manifold of a merely possible intuition. It does not represent the subject of consciousness, as phenomenal, for the simple reason, that it takes no account

whatsoever of the manner of intuition, whether it be sensuous or intellectual. I do not thereby represent myself to myself, either as I am, or as I appear to myself, but I only conceive of myself, as of any other object, without taking account of the manner of intuition. If, as *subject* of my thoughts, I also represent myself as the *ground* of thinking, these modes of representation are not the categories of substance or cause, because these are functions of thought (judgment) as applied already to our sensuous intuition, such sensuous intuition being necessary, if I wish to know myself. But I only wish to become conscious of myself as thinking, and as I take no account of what my own self may be as a phenomenon, it is quite possible that it might be a phenomenon only to me, who thinks, but not to me, so far as I am thinking. In the consciousness of myself in mere thinking I am the *substance itself*, but of that substance nothing is thus given me for thinking.

The proposition I think, if it means *I exist* thinking, is not merely logical function, but determines the subject (which then is at the same time object) with reference to its existence, and is impossible without the internal sense, the intuition of which always supplies the object, not as a thing by itself, but as phenomenal only. Here, therefore, we have no longer mere spontaneity of thinking, but also receptivity of intuition, that is, the thinking of myself applied to the empirical intuition of the same subject. In that empirical intuition the thinking self would have to look in the categories of substance, cause, &c. for the conditions of the employment of its logical functions, in order not only to distinguish itself as an object by itself, through the Ego,

but to determine the mode of its existence also, that is, to know itself as a noumenon. This, as we know, is impossible, because the internal empirical intuition is sensuous, and supplies us with phenomenal data only, which furnish nothing to the object of the pure *consciousness* for the knowledge of its own separate existence, but can serve the purpose of experience only.

Supposing, however, that we should hereafter discover; not indeed in experience, but in certain (not only logical rules, but) *a priori* established laws of pure reason, as applied to our existence, some ground for admitting ourselves, entirely *a priori*, as determining and ruling our own *existence*, there would then be a spontaneity by which our reality would be determined without the conditions of empirical intuition, and we should then perceive that in the consciousness of our existing *a priori* there is contained something which may serve to determine our existence, which otherwise can be determined sensuously only, with respect to some inner faculty, related to an intelligible, though of course, only an ideal world.

This, however, would not in the least benefit the attempts of rational psychology. For though through that wonderful faculty, which becomes first revealed to myself by the consciousness of a moral law, I should have a principle, purely intellectual, for a determination of my existence, what would be its determining predicates? No other but those which must be given to me in sensuous intuition; and I should therefore find myself again in the same situation where I was before in rational psychology, requiring sensuous intuitions in order to give significance to the concepts of my understanding, such as substance, cause, &c., by which alone I can gain a

knowledge of myself; and these intuitions can never carry me beyond the field of experience. Nevertheless, for practical purposes, which always concern objects of experience, I should be justified in applying these concepts, in analogy with their theoretical employment, to liberty also and to the subject of liberty, by taking them only as logical functions of subject and predicate[1], of cause and effect. According to them, acts or effects, as following those (moral) laws, would be so determined that they may together with the laws of nature be explained in accordance with the categories of substance and cause; though arising in reality from a totally different principle. All this is only meant to prevent a misunderstanding to which our doctrine, which represents self-intuition as purely phenomenal, might easily be exposed. In what follows we shall have occasion to make good use of it.

[1] It is necessary to put a comma after *Prädicats*.

SUPPLEMENT XXVIII. [See vol. ii. p. 426]

I have sometimes called it *formal* idealism also, in order to distinguish it from the *material* or common idealism, which doubts or denies the very existence of external things. In some cases it seems advisable to use these terms rather than those in the text, in order to prevent all misunderstanding. (This is an additional note in the Second Edition.)


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Government of Maharashtra
on 05 October, 2018